

THE CULTIVATOR

THIRD.]

TO IMPROVE THE SOIL AND THE MIND.

[SERIES.

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CULTIVATION OF THE FIELD BEAN.

In England the bean is extensively grown, not so much, however, for human food as for stock feeding, and when its feeding and manurial values are taken into view, it is considered a profitable crop. But the beans usually grown in England, are quite different varieties from the field beans grown in this country. The English varieties grow upon stiff upright stalks, and they are occasionally found in some of our gardens, and known as coffee beans. They have been grown to some extent in this country, but from some cause have not been found so well adapted to our climate as the ordinary crops we cultivate. In England they are grown on strong clayey or stiff loamy clay soils, while our beans succeed best on dry, quick soils. Pound for pound, there is but little difference between the English and American varieties; both contain a larger percentage of nitrogenous compounds, the real muscle forming, strength giving, nutritive matter, than any other vegetable product we cultivate. "There is no vegetable we produce which so nearly supplies the place of animal food as the bean."

Beans freely fed to milch cows increase the quantity of milk, as also the casein, (curd,) the animal principle. Fed to sheep they increase the muscle, wool and milk in much greater proportions than Indian corn; but beans are not so productive of fat when fed to sheep as corn and oil-cake; hence, for stall feeding sheep, the more oily foods, such as corn, oil and cotton-seed cake, are preferable. While to the flock master, whose object is wool and strong healthy lambs, beans and oats are to be preferred.

If the preceding remarks are true, and we have no doubt of their correctness, then it would be for the interest of wool growers to much more extensively cultivate beans as winter provender for their sheep. It will not be necessary for them to raise the choicest varieties of white beans for this purpose, because there are many varieties of large and colored sorts, that are more productive than the high priced "blue pod, or the extra pea bean," which are equally valuable for sheep feeding.

In feeding beans to sheep there seems to be one important advantage, not usually taken into consideration, viz., the increased value of the manure of the bean fed over that derived from the hay and straw fed flock. We will attempt to illustrate this point.

Messrs. Lawes & Gilbert of England, and other scientific men, have pretty accurately determined the comparative money value of cattle and sheep manures derived from the feeding of different foods, such as hay, turnips, oil and cotton-seed cake, peas, beans, &c. These estimates are founded upon the price of good Peruvian guano, say at

\$60 per ton. The value of the manure derived from different kinds of food is based upon the amount of ammonia, phosphates and alkalies in the excrements, (solid and liquid,) estimated at the usual prices attributed to these substances in guano and other commercial manures.

Thirty-seven and one-third bushels of beans, at 60 lbs. to the bushel, will weigh a ton of 2,240 pounds. The beans at one dollar per bushel would amount to \$37.33. According to the estimates of Messrs. Lawes and others who have carefully investigated these matters, the ammonia, phosphates and alkalies in the excrements derived from a ton of beans, basing the value of the ammonia, &c., upon that contained in guano, amounts to \$17.75, which, deducted from \$37.33, the cost of beans, leaves the actual cost of them \$19.58, or 52 cents per bushel. Boussingault, in his tables of "nutritive equivalents of different kinds of cattle food," estimates 23 pounds of beans equivalent to 100 pounds of English hay. If the value of the manure from beans, and their feeding qualities, as put down by Messrs. Lawes, Gilbert, Boussingault, and others, are practically correct, and doubtless they are nearly so, it is quite evident that it would be profitable for farmers who keep dairy cows and sheep, to cultivate the bean for stock feeding much more extensively than heretofore. They can be best grown on light, easily worked soils, and require but little manure for the production of fair crops. For this purpose the earliest varieties, having reference to their productiveness, should be selected for field culture.

But beans are frequently a profitable crop to grow for market, if the best varieties are selected for this purpose. It is just as easy to grow a number one as a number three bean for market. It is just as easy for the farmer to grow the "blue pod, the marrow, or the extra pea bean," as it is to raise a mixed medley of white, black, yellow, ring-streaked and speckled. In one case the farmer may obtain two dollars per bushel; in the other 75 cents. There is no exaggeration in the above statements. They have both been verified within our own knowledge within a few weeks past.

Field beans are generally grown on light, dry soils. If planted on rich loamy ones, or if fresh manure is freely used, they are apt to run too much to vine, without a corresponding quantity of seed, and ripen unevenly.

In selecting seed it is a good plan to go into the field just before they are harvested and select those ripening at the same time, avoiding those having a tendency to vine. These should be first harvested and kept purposely for seed.

Before planting, all colored ones should be carefully picked out, and none but good sound seed planted. This course has long been practiced by the farmer alluded to, who usually obtains \$2 per bushel for his beans. They are purchased at the store for retailing. It usually much increases the crop by using a small quantity of rich compost in the hill at planting time. A small handful of a mixture of hen manure, muck and plaster, or a little guano, usually has a beneficial effect upon the crop. Planted in rows wide enough apart to allow the passage of a cultivator, very much lessens the expense of hoeing. The hills should be about two feet distant.

In some sections of the country, in harvesting them, they are stacked around poles, having the limbs left on the poles a foot or so in length. They remain in these stacks till sufficiently dry for threshing, when they are taken to the barn, threshed and spread to dry.

TREATMENT OF WORN-OUT FARMS.

Sometimes—in fact quite frequently—the occupant of an old farm, finds that his land is less productive than he desires; that, for some reason, every crop is more or less of a failure. He may generally find that reason in the mismanagement of the soil—that it has been under an exhausting course of cropping and tillage, in which little care has been taken to keep up its fertility or restore the elements *used up* in the products removed, and that finally it has become *worn out* in the service of a hard master, who did not understand or could not appreciate the principles upon which depend the productiveness of the soil. At any rate, the course pursued indicates such ignorance or negligence, and it is very certain that such is the usual result.

Now, what course of treatment offers the best remedy in such a case, supposing the farmer would "turn over a new leaf," or that the farm has come into new hands which seek to repair the injury it has suffered, and restore the elements of productiveness exhausted, so that good crops may be the rule and not the exception as heretofore? We shall offer only a few desultory hints on this subject, as it is incidentally the great topic of a large share of the contents of our paper, but we trust these hints may not be without bearing and influence on every interested reader.

In the first place, if it has not already been done, we would divide the farm into fields convenient of access, and suited to the course of cultivation to be pursued. The size and number of the fields would depend on the extent of the farm and the rotation of crops engaged in, but should not exceed the maximum amount of manure available for applying thereto, at least for one year during each rotation.

The second thing in importance and effect, would be to commence the *thorough drainage* of the farm. Where to begin, would depend on the "lay of the land" for convenient outlet, the needs of different fields in this respect, and the present value of the product given. If the capital was small, or the result thought problematical, the field requiring the least outlay for drainage might be taken first; but with plentiful means, we should commence with that needing most work, and where the enhancement in value would be at once most apparent from the large increase in products effected.

Thirdly, and of equal importance, perhaps, is the thorough and deep cultivation of the soil. We think it will be difficult to find "a worn-out farm" which has been managed under this system; the culture has been shallow and careless instead. Very often but a few inches of the top-soil has been exhausted, and deeper and thorough cultivation is all that is needed to make the farm productive again. Any one seeking to improve a worn soil should experiment, at least, in deep plowing and subsoiling in connection with other measures of amelioration and enrichment.

Upon a drained and deeply cultivated soil, manure is of largely increased value. For this reason we have placed these operations first on the list. A wet, cold soil must first be made dry and warm before any large increase in product can be looked for. A hard, shallow soil must be rendered deep and mellow before it can hold food for the growth of crops in the best state to assist their productions. Properly drained and worked, it will be but little affected by extremes of drouth or moisture, and the *uncertainty* of a crop always existing on an undrained, shallow soil, will be mainly removed.

Hence, in the fourth place, the great means of great and continued productiveness is *manure*. We must feed the soil if we would have it feed our animals and ourselves. We must return for the valuable commodities it gives us, the refuse remaining from their consumption, or, at least, an amount sufficient to make good the loss. No available resource of fertilizing material should be neglected. The muck-mines should be worked, the stable manures should be carefully managed and saved; nothing which will feed vegetable growth should be allowed to go to waste. Lime, plaster, ashes, bones, etc., are often most profitable applications to the soil, stimulating its dormant elements or preparing them for use,—thus repaying their cost annually for years, and, employed in addition to barnyard and green manures, bring these into more profitable action in the production of the various farm crops.

We may hint, lastly, at the kind of farming to be pursued. It will be most securely and most cheaply managed, if of a mixed character—embracing grain and stock growing—the feeding out upon the farm of considerable portions of its products. In no other way can we conveniently market the crop and retain the manure to feed the soil. By no other method are we so well ensured against the effect of “bad years” which frequently fall on some product or other, to the destruction of all profit therefrom. But we will not farther pursue this topic, but rather commend it to the consideration of our correspondents, especially those experienced in the “treatment of worn-out farms.”

[For the Country Gentleman and Cultivator.]

OATS AND PEAS MIXED FOR FEED.

The winter is now so far advanced that farmers are enabled to determine whether the systems of treatment of their stock which they have pursued, are to be recommend or not—a conclusion which would have been too hastily arrived at had it been formed after the first few weeks of feeding.

Having tried it successfully, we can speak highly of mixed oats and peas for feed. The advantages of this grain spring from considerations having reference, first, to its culture, and second, to its use as feed. By sowing, upon such ground as would do for corn, a mixture of two bushels of oats to one of peas, three bushels to the acre, the peas do not injure the oats by overrunning them before they head out; the crop is easily gathered, and grinds well. Fifty bushels to the acre is a moderate yield, the two grains maintaining in the yield about the same proportion as in the seed sown, the oats gaining a little.

The relative expense of growing this crop, as compared with corn, will appear by a reference to the following estimates, which are deemed fair and reasonable:

FIVE ACRES OF CORN.		DR.
To Plowing.....	\$7.50	
Cultivating or harrowing.....	4.00	
Marking out.....	1.50	
Seed.....	.94	
Planting.....	3.00	
Cultivating out, twice.....	4.50	
Hoeing, once.....	5.00	
Cutting up.....	5.00	
Husking.....	16.00	
Shelling.....	5.00	
	\$52.44	

CR.	
By 200 bushels Shelled Corn at 50c.....	\$100.00
Fodder.....	15.00
Gross Profit.....	\$115.00
Nett.....	\$62.56

FIVE ACRES OF OATS AND PEAS.		DR.
To Plowing.....	\$7.50	
Harrowing.....	2.50	
Seed.....	6.75	
Harrowing in.....	4.00	

Harvesting.....	3.75
Threshing.....	10.00
	\$34.50

CR.	
By 250 bushels Oats and Peas at 40c.....	\$100.00
Straw.....	10.00
Gross Profit.....	\$110.00
Nett Profit.....	\$75.50
	62.56

Difference in favor of Oats and Peas..... **\$12.94**

In the foregoing we have not supposed manure to be applied to either crop, and have omitted several items which both should have charged to them in common.

Provided our estimates are correct, we show the oats and peas to be the more profitable crop. Wheat may follow either equally well, but the ground is left earlier, and in cleaner and better condition to plow by the oats and peas, and indeed in these days it is impracticable to sow wheat after corn; while in exhausting effect upon the soil we have failed to discover any practical difference. We have made no account of accidents, to which the corn is much the more liable, such as the ravages of birds, worms, frosts and drouth. The fodder from the stalks of one and the straw of the other, if secured with equal care, properly saved and economically fed, is of nearly equal value in point of fact, but we have made in our estimates a difference of a third.

The comparative value of the two crops for feed may be tested, in the first place, by practical experiment, and secondly, by scientific analysis.

In practice we have found in feeding the two kinds of grain, either whole or ground, an advantage in favor of the oats and peas, arising from its better adaptation to different kinds of stock, or rather to more kinds of stock. It is better for sheep than corn, and the meal upon cut straw is much better suited to horses than corn in any shape, while for cattle and swine, whether fattening or not, there is nothing better than this meal, using weight for weight. The grain mixed as we have suggested, weighs from forty to forty-five pounds to the bushel; the meal a trifle less. Whether intended to be fed ground or unground, the mixture may be made lighter or heavier at pleasure by a common fanning mill, which will readily eliminate either peas or oats. Corn, on the other hand, is not susceptible of this graduation. The quantity to be fed of this mixed grain, cannot be specified, inasmuch as scarcely two farmers agree respecting the proper amount of any grain, each occupying ground somewhere between the Johnstonian and the starving theories. We have known ewes to do exceedingly well upon half a pound a head per day of this grain and nothing else but wheat straw; but they were fed with regularity, warmly stabled, and carefully watered. Winter milch cows thrive upon this meal; and for wintering pigs we prefer it to anything else. Fowls, too, of every description, eat the grain with avidity and the most favorable effects.

An analysis of the constituents of oats and peas and of corn is instructive. The following is one view:

	Corn.	Oats.	Peas.
Albuminous proximate principles, (per cent.) ..	12	19.91	20
Saccharine do. do. do. ..	73	68.68	55
Oleaginous do. do. do. ..	9	7.33	2

The comparative nutriment values of the three grains, wheat being 100, is as follows, according to one authority:

Corn.....	108.
Oats.....	112.7
Peas.....	90.7

According to the same authority the nitrogenous ingredients of the three grains, in per cents, are, in fresh condition:

Corn.....	12.48
Oats.....	15.67
Peas.....	23.49

Dried at 212° Fah.:

	Nitrogen.	Carbon.
Corn contains, per cent.....	2.30	45.45
Oats do. do.	2.82	46.66
Peas do. do.	4.57	45.33

According to some authorities, peas contain four times as much nitrogen as corn.

From all these ascertained facts, we deduce the conclusions that corn is best suited to make fat upon a mature

animal, while oats and peas are best adapted to keep stock in good "store" condition, or to make young animals grow. Starch (of which corn contains about 80 per cent., oat-meal 59, and peas 32,) contributes to the formation of fat; and here it is to be observed the corn has the advantage. So, too, of the oily matters. These, as well as the saccharine principles, belong to a class of substances which, containing no nitrogen, cannot be converted into the fabric or flesh of the animal body, but are designed to be consumed in the system for the production of animal heat. And here it may be observed, that the proportion of the saccharine principles in oats and peas is sufficient for the purposes of this latter object. The albuminous or nitrogenized compounds, however, which go to repair, construct fibres and tissues, and make muscle, &c., exist in a much greater degree in the oats and peas than in corn. It follows that the oats and peas contain the more of the true elements of *nutrition*, as contradistinguished from the *fat-forming* constituents. Therefore, this mixed grain is most suitable for ordinary feed.

Oil cake is highly valued, and because highly nitrogenous. Peas approximate closely to oil cake in per centage of nitrogen; and the advantages of feeding them arise, not so much after all from the less amount required by the animals, as from the increased value of the manure. And the manure again produces more highly nitrogenized crops, thus continuing a perpetual circle of benefits.

Boussingault estimated, from experiments and analyses, that the equivalents to 100 lbs. of good meadow hay were

Of Corn.....	59 pounds.
Oats.....	68 do.
Peas.....	27 do.

Pork fatted on peas is deemed firmer and of superior quality to that made from corn; and the manure of hogs fed upon peas, is believed to be worth nearly four times as much as that made from corn-fed swine, by reason of the greater quantity of nitrogen, the essential element of ammonia.

With an abler advocate, there is no doubt a much stronger case, in favor of raising the crop in question for the purposes of feeding stock, might be made out. But perhaps enough has been said in the foregoing to draw attention to the subject. It remains to be added that not a few farmers find their soils unsuited to corn, while they produce oats or peas with success. To such we would say, when your backs are tired hoeing spindling corn, or your fingers a-cold husking the "nubbins" you have raised, try oats and peas. By judicious manuring and thorough tillage, much larger yields may be obtained than the one we have assumed in our estimate. In some districts, it may be, the bug still infests the pea; but this scourge has passed away from Western New-York. Doubtless, to the great corn-growing regions of the West our theory would be inapplicable. But in all wheat-growing sections, the chief object of the farmer is to promote the *accumulation of ammonia*, which wheat, in its growth, not only requires, but consumes and destroys. Now, peas do not destroy ammonia, but, on the contrary, drawing large quantities of nitrogen from the atmosphere, they return to the soil, in the manure made by the stock to which they are fed, the same element so indispensable to the next crop of wheat. It may be asked, why not raise clear peas instead of mixing oats? To this we answer, first, that the mixed crop yields upon land in rich condition nearly as many oats as if clear oats, and gives the peas extra—we have known between 80 and 90 bushels produced to the acre; secondly, the grain is more advantageously harvested, being easily cut with Manney's reaper, and thirdly, though we can furnish no scientific reason therefor, we have found the mixed grain the more convenient and useful in practice. Of course, we wish to be distinctly understood as advocating the raising of this grain to be fed on the farm, and never to be sold.

Canandaigua, N. Y.

HAMPDEN.

LARGE CATTLE.—I send you the weights of some large cattle, raised and fatted in Gloucester Co., N. J. The weights of four are as follows:—2,283—2,051½—2,022½—1,981½—dead weight.

JOSHUA PINE.

FARMERS' TOOLS.

A certain number of tools, and some skill in their use, will often save the farmer much time in sending for a mechanic, and some expense in paying him. Every farmer should be able to make small repairs on his wagons, gates, buildings, &c. A room, or a portion of a room, should be devoted to keeping these tools; a pin or nail should be inserted for each one to hang on, and the name of each tool written or painted under the pin, that it may be promptly returned to its place, and any missing one detected. Keep every tool in its place—do not wait for a more convenient season, but return every one to its pin the moment it is done with. If left out of place a minute, it will be likely to remain a week, and cause a loss of time in looking for it, a hundred times greater than in replacing it promptly. Keeping every thing in its place is a *habit*, costing nothing when formed. The tools should be, a hammer, saw, augers, brace and bits, gimlets, screw driver, wrench, two planes, chisels, mallet, files and rasp, saw-set, trowel, and a box with compartments for different sized nails, screws, nuts, bolts, &c. Common farm implements and tools, such as hoes, spades, shovels, forks, rakes, scythes, &c., may be in the same room, on the opposite side, and the same precautions taken to keep every one in its place.

PASTURING.

It is poor economy to feed pastures very close. They will yield much more, if the grass has a fair start, than if fed down so low that it can scarcely grow. Cattle which pick a pasture down to the *bone*, nearly always run largely to bone. JOHN JOHNSTON supposes a case, founded on repeated observation, in illustration of this truth. He says: "A. has a field which he thinks will keep twenty cattle, and he puts them into it. B. has a field of the same size and quality, but he puts only ten cattle into it. Now it will almost always be found that in the autumn, the ten have gained as many, often more pounds live weight, than the twenty. The 10 with first rate pasture should gain 400 pounds each, and it is doubtful if the 20 would have gained 200 pounds each. The 10 would make extra beef, and bring an extra price, while the twenty would make only third-rate beef, bringing little more per pound than they were worth when they were turned to pasture. The ten paid \$25 each for their pasture, or perhaps more. This I have often seen."

GREAT FEAT AT CORN-HUSKING.

We have been often amused in this part of Jersey, when we read of machines for husking corn, but when we saw one at our Somerset County Fair, we could not help laughing outright at it—for it is not uncommon for a good hand to husk from 80 to 100 bushels ears of corn in one day in this region of country. But when we saw in the January CULTIVATOR, and also an explanation in the number of February, of a young man husking 40 bushels in six and a half hours, we thought we would become communicative, and tell you what has been done in this part of the country. In the fall of 1856, in the month of November, my brother-in-law, who resided with me, husked 120 bushels ears corn in one day, pulled down the stalks which numbered 80, and bound up all the stalks. The corn I picked up myself, and measured my basket with a half bushel. The corn was a reddish yellow variety of 10 or 12 rows, and planted on a clover sod that had lain one year, without any manure, and gave about 90 bushels ears to the acre.

JAMES OPIE.

MARKET FAIRS.

It is proverbially difficult to change the course of Trade. Of all habits, those of buying and selling appear most regardless of any law except established custom. Hence, great as are the advantages of MARKET FAIRS, it cannot be anticipated that they will *at once* assume with us, the important rank which they may, very likely, attain after a generation or two of sellers have grown up into dependence upon them, and they have acquired pre-eminence with the purchasing public, each for itself, as the best resource for this or that particular sort of stock or product.

We do not write with the view of discouraging those who are entering upon such undertakings in various parts of the country. Certainly the Market Fair can never grow into importance, unless it has sometime a beginning; and the earlier it is born into the world, the sooner it must attain age, dignity and strength. Despise not, then, the day of small things. If there is really room for a Market Fair in your vicinity, do not be disappointed, if the first or second time the experiment is tried, "all the world" should not be there to bargain, to bid, and to buy. Stand up to your determination; try again; remember that the *permanent recurrence* of such occasions, *upon which the public may depend*, is a condition precedent to their ever becoming a fixed "institution;" therefore, unless some plan is decided upon definitely, adhered to persistently, and carried out promptly and with regularity, there is just so much time and labor irretrievably lost.

—Our readers were some weeks ago apprized of the intention of the managers of the Hampden Co. (Mass.) Ag. Society, to hold a Market Fair at Springfield last week. The Republican says that "nearly 2,000 persons must have been present, with 200 horses, from 75 to 80 neat cattle, a respectable number of sheep and swine, and large quantities of produce." The stock, however, appears to have been rather dull of sale, but "grains, seeds, hay and straw, were in lively demand." There were a considerable number of implements present. Our contemporary concludes as follows:—

Some of the mistakes of the farmers who do not comprehend the nature of a market fair are really ludicrous. Not a few imagined that the secretary and committee of arrangements were under obligations to sell their produce for them if they but brought it to the grounds, and others thought the bare registry was sufficient without exhibition. The true way for a market fair is for each man to stand by his produce and stock, and sell as he would on any other occasion. The thing, however, is inaugurated, and we trust will become a permanent semi-annual.

—In several instances in Kentucky and Ohio, these Market Fairs are already well established. The scenes of "a court day in Bourbon" have been described in our columns, when stock to the value of thousands of dollars changes hands, and all Paris (in Kentucky, and not in France,) is alive and stirring. A correspondent recently showed that the farmers of Madison county, Ohio, were waking up to the importance of such sale-days; they take place at London, (in that county, and not in England,) and we have just received an account of one which was held the 2d inst. "Tuesday," says the local paper,

"Was one of the liveliest days in London we have witnessed for a long time. Our streets were crowded with people, and as the day was fine, every body seemed in good humor with themselves and the rest of mankind. Notwithstanding the roads were unusually bad, a considerable number of cattle found their way into market, and were sold at prices somewhat lower than at the last sales. The following is our report as furnished by our regular reporter."

And from the report we learn that nearly 250 head of cattle and several lots of swine changed hands. At the same time "a Butter Fair" was going on, at which fourteen prizes were awarded in six classes. This was arranged and carried out mostly by Mr. I. F. WILLIS, to whom much credit is accordingly awarded.

—To conclude, we have before us a Notice of the Second Market Fair of the BEDFORD FARMERS' CLUB, which is to be held near the Katonah Station, Harlem railroad, (Westchester Co.,) on Wednesday and Thursday, May 1 and 2. Our friend Hon. JOHN JAY, and MESSRS. JARED H. and OLIVER GREEN, are the Committee of the Club having the matter in charge.

[For the Country Gentleman and Cultivator.]

STALK GROUND.

MESSRS. EDITORS—As the time for action is approaching, and with us is near at hand, I will briefly notice the treatment of stalk ground, (or the ground on which corn was grown last year.) It is a common thing in passing through the country, to see many stalk fields lying idle, and grown up with weeds until fall, when they are plowed up for wheat.

Now I would ask those persons, who let their stalk ground lie over idle, through your valuable journal, a few questions, and then give my mode of culture.

1st. If the weeds do not exhaust the soil as much as a crop of oats?

2d. If the weeds, when plowed under in the fall, benefit the land as much as the growth of the summer exhausts it?

3d. If it does not make the ground too light for a good yield of wheat, by plowing the weeds under?

4th. If it is not liable to make the ground very filthy, and require more labor for the next crop of corn?

5th. If the weeds are more valuable for pasture than clover, had it been sown among the corn?

My mode of cultivation is this. I either sow my corn ground in wheat in the fall, when I cut up the corn, or sow it in oats in the spring. In either case I sow it with clover. Pasture it one year; then plow for wheat, and set in grass.

Some persons object to sowing clover seed after oats, saying it does not take well. If these persons will sow the seed as soon as the oats are harrowed in, and follow the sowing of the clover immediately with a roller, they will cease saying that clover will not take after oats.

Glenville, Harford Co., Md.

J. P. B.

[For the Country Gentleman and Cultivator.]

SHEEP SHEDDING THEIR WOOL, &c.

In the Co. GENT. of April 4, p. 224, "E. P." says: "Will some of your readers inform me how to prevent my sheep from shedding their wool? Some attribute it to feeding oats, but as I have not fed any, that cannot be the reason." We dare say that feeding oats is not the reason, though *not* feeding oats, or some other grain, may be. Were E. P.'s sheep in good condition when they entered the winter, or were they poor, and has he been trying to bring them up recently? It was substantially remarked in an editorial article on the "Care of Sheep in Winter," (Co. Gent.) Jan. 3, '61, that when sheep lose their condition in November and December, it stops and completes or ripens the growth of wool, so that on the renewal of good food and increase in flesh the skin sends forth a new growth of wool that pushes off the old and causes it to fall from the sheep. This seems a very reasonable solution in many cases, though it may not be in "E. P.'s." At any rate, we have never known sheep kept in good order at all seasons to shed their wool before it was sheared off. Hence the preventive is constant care and especial attention to see that they enter kindly and without loss of condition on the change from fresh grass to winter fodder.

BEST FOOD FOR EWES.—"E. P." asks "also what is the best feed to insure a great flow of milk?" The late DAVID ELY, Esq., whose opinions on all questions of sheep husbandry were the result of close investigation and long experience, once told the writer that no grain he had ever fed to ewes had been so available in producing a flow of milk as good wheat *shorts*. About one pound per day is the proper quantity, say half a pound morning and evening. Corn he regarded as injurious, as far as milk was concerned, and dangerous if fed in any quantity.

With plenty of early cut and well cured clover hay, ewes will generally yield a good supply of milk, and with half a pound of corn and beans in addition per day, and plenty of clean water, good lambs can be raised in winter. Roots might be used to good advantage, but we have had no experience with them.

A YOUNG FARMER.

[For the Country Gentleman and Cultivator.]
CARROT CULTURE.

Will it pay to raise carrots for feeding stock, is a question often asked. It don't pay, is an assertion often made. Brother farmers, it does pay, and I will tell you how. It pays in the extra amount of food raised for a given amount of land and labor. I have not failed to raise but once in 12 years, a good crop of roots, mostly carrots, and have found them to pay me better than any crop that I can raise for cattle, sheep and horses.

I call it a paying crop, even to sell. I once had three-quarters of an acre from which I sold \$100 worth, and kept over 100 bushels.

I consider them a very sure crop when properly managed, and verily believe that 100 bushels would be raised where one is raised now, if farmers had not got the wrong notion that it is an "awful job" to tend them.

I give my way of raising, hoping that *some* may "try, and if they don't succeed, try again:"

Take a rich piece of sward, where the soil is deep, the longer seeded the better. Cover with stable manure; plow with a double plow; roll and drag fine the last of March or the first of April. Let it lay till the first week in May; then gang plow and drag fine again, (to kill weeds,) and sow immediately 2 pounds of seed per acre. I use one of Emery's seed planters, and drill from 18 to 20 inches apart. Be careful and not get the seed too deep. The first year I got my seed drill, the seed was put so deep that the plants were thin—but oh! what carrots! some weighed 10 pounds.

As soon as the plants are up sufficiently to trace the rows, grind up your hoes sharp, and commence by hoeing between the rows as close as possible to the plants, and *be sure to cut across the rows and leave the plants the width of your hoe apart*, and if you are a Yankee there will not be many weeds left. After about two weeks hoe in like manner, and what weeds are left pull with your finers, and leave the carrots about 7 or 8 inches apart. This is near enough for profit and plants. If your land is not full of foul seed, there will not be any further trouble until harvest.

When the land is rich and well tended, the roots will have to be spaded out—a plow and pulling out is sure to break off a great many.

I think—won't say think—I *know* that carrots can be raised for five cents per bushel, and think they can be raised for less. Let's figure a little:

Use of 1 acre.....	\$7.00
Manure.....	10.00
Plow, roll and drag.....	2.00
Ganging and drag.....	1.00
Seed and sowing.....	3.00
Hoeing and harvesting.....	20.00

Whole expense, \$43.00

And this is liberal for one acre. Estimating the crop at 1000 bushels this would give us a cost of 43-10th cents per bushel on the average, and the value of the crop, at 12½ cents per bushel, which is low, will be \$125, a profit of \$82. Can any one show as good figuring in any other crop?

When taken in connection with other feed, they are invaluable. They are not only healthy, but will fatten cattle, sheep and horses. I have fattened and sold four head of cattle this winter on carrots, with one quart of meal sprinkled on them at a feed, together with cornstalks. One was a Durham cow, milked all the while until *sold for beef, and was fat*. This was an experiment, and proved satisfactory—that cows can be fattened on carrots and meal, and milked at the same time—at no time was the meal over 2 quarts per day.

I also have six other cows, all of which give milk of the richest kind, and a good flow of it, that are fed on carrots once a day, and once on poor cornstalks and clover hay.

From 700 to 800 bushels per acre is an ordinary crop, and may be obtained with ordinary land and culture—1200 may be raised, and even more, by high cultivation—mine this year went at the rate of 1200, and the cost of labor,

aside from topping, which my little boys did, will not exceed 2½ cents per bush. This (the cost) is partly owing to the fact that the ground was not very weedy.

Allowing 250 pounds of carrots (which is conceded by practical farmers) to be equal to 100 pounds of hay, and at 60 pounds to the bushel, we have at the above rate of yield the equivalent of over 14 tons of hay per acre, which will take seven acres of *good* meadow to equal.

This may astonish some who bear the name of farmers. I know whereof I affirm by actual experience. As for *this* part of husbandry, I consider a farmer a poor calculator who hires his many acres of June and wire grass mowed by manual labor, and raked by hand, being too slippery and short to be raked with a horse-rake, which is half wasted in the winter, for the reason that nothing *can* or *will* eat it, and then coolly tells you that it *don't pay to raise roots*. Oh! consistency thou art a jewel!

There are other points connected with the culture of carrots that the writer would like to talk about—quality of soil—condition of land for succeeding crops—killing of Canada thistles by the cultivation—mode of harvesting, feeding, &c., &c.; but thinking that the readers will consider themselves *poulticed* with carrots sufficiently for once, I ask of correspondents, further considerations on this subject. G. Orleans Co., N. Y.

[For the Country Gentleman and Cultivator.]
HOW TO REAR CATTLE.

The Proper Management of Calves.

Now, the one great and leading idea is to keep a calf *growing*, until a point is reached in his weight which we cannot with profit exceed. We want to adopt that system of management with our calves, which will not render them as fat as it is practicable to make them with a little impulsive feeding; but which will keep them constantly growing all the year. Whether they are allowed to suck, or are fed by hand, it is very important that the management be such that they do not, not only fall away when they are weaned, but continue to improve in size and flesh. If they are allowed to fall away or to stop growing, there will be want of success in feeding in years to come. Therefore, before calves begin to grow poor in autumn, or at the commencement of winter, they should have at least a quart of meal every day. The meal thus fed will not be lost. During the cold and stormy days and nights of autumn, they should be allowed to have a good shelter to protect them, as one cold storm will use up more fat and flesh than they can put on in two days. During winter they must be kept in a thrifty condition. We cannot expect that calves will grow in the winter as they will in warm weather; but by *keeping* all their fat and flesh on them, and keeping them in good health, when they are turned to grass, we shall perceive a two-fold efficacy in the meal and other food, which did not appear to be as effectual in promoting their growth during the winter, as we had desired to see. It is the every-day, faithful attention that makes good calves.

My own management with calves is to prepare a comfortable shed for them before cold weather commences. I prefer a good shed for them, to confining them in stalls. In the morning we feed them as much cut corn stalks as they will eat during the former part of the day, and they always have access to straw. At noon they are fed cut feed, and each one receives not less than a quart of fine meal, mingled with the moistened straw. The meal is usually equal quantities of oats, buckwheat and Indian corn. When we can get oil-meal, we mingle that with the other meal, so that it is about one-fourth oil-meal. At evening they have as much good hay as they will eat all night. Three times a week, at least, they get nearly a peck of roots each—turnips, or potatoes, or carrots. When they begin to feed on grass in the spring, after the cornstalks and hay have been discontinued, they get a mess of cut feed and meal every morning, until their bowels have become accustomed to grass. Whether they are in the

yard or pasture field, they always have access to a tub of salt. This brings us to

The Second Year's Management in Feeding Stock.

If calves have been kept for one year, as has been recommended, we are sure of a most excellent start in a right direction towards rendering feeding of stock a paying business. Now the main thing is, to keep the yearlings growing all the season. In autumn, whether grass is short or not, if yearlings are fed with pumpkins or such trash, a little care must be exercised lest after the pumpkins fail, they do not begin to fall away before they get into winter quarters. Farmers are very apt to allow their young cattle to begin to grow poor at the beginning of winter, before they are really aware of it.

When animals are passing from grass to hay, at the commencement of winter, they will decline in fat and flesh wonderfully quick, if special care is not exercised in feeding them. Therefore, a little meal must be fed daily when the pasture is short, until they are fully into winter quarters. Now let the management be with the animals in their second year, precisely as with calves; only I always give them about two quarts of meal each, instead of one, with a daily feeding of turnips of nearly a peck each.

Another thing, in feeding stock, after the first year I consider it very important to have suitable stalls for them, as they will hook each other, and race about the yard so furiously many times, that every one does not get his allowance.

My own practice is to feed them in the morning in their stalls, and let them loose in the yard, where are spacious open sheds, and straw and water, till noon, when they are again fed their cut feed and turnips, and after an hour or two turned into the yard to eat straw and drink, until towards evening, when they are fed in their stalls all the good hay they will eat until morning. Great care is exercised in turning them to grass, that they do not get the scours, and fall away by passing too soon from dry to green food.

This brings us successfully to

The Third Year in Feeding Stock.

Now, as we enter upon the requirements of this year, there is great danger of over-stocking the pasture; and it must be borne in mind, that a bullock in his third year, will require more grass to keep him growing, than it did when he was but a yearling. It is the worst kind of farm policy to keep so many cattle in a pasture, that they gnaw every thing close to the earth, and then not obtain as much as they can eat. It is as important to keep stock growing during the *third* year as any other year; but if they are kept on a short allowance of grass, they cannot improve as they ought to, nor as they would, did they have as much grass as they can eat during the entire season. I always manage to have so much of my land in pasture, that my cattle will always have a "good bite;" and also to raise a few calves every year, and turn off a few beef cattle, so as to keep about so many from year to year. There is great danger of getting too many three-years-old steers on a small farm. We want to keep them growing during the third year, and at the same time have an eye on the improvement of the farm. If we turn so large a number of young cattle into a pasture, that they keep the grass gnawed close to the ground all summer, so that the leaves never are allowed to grow large enough to draw but very little nourishment from the atmosphere, there will be a much greater draught on the soil. I always aim to let my pastures get a little ahead of my stock, and never to keep so many, but what we would think there is an abundance of pasture for two or three more.

Multitudes of farmers get wonderfully frightened about their cattle in the third year—because they eat so much—and they begin to figure up the expense for two years past of keeping them, and about how much it will cost before they will be able to realize any pecuniary compensation for them, and so they will begin to feed a *little less*, thinking it will never pay to feed out grain and hay at such a rate; and will often sell their stock at a low figure, just

at the time when they are improving the most rapidly, and are paying better for their feed than they have in any previous year.

Sometimes men get frightened in the first or second year, and sell their cattle for just what they can get. A friend of mine last fall got the "blues" a little, and sold a fine yearling steer for \$16; when his cash value, after being dressed, was worth—as the butcher told me—\$24, at 4 cts. per lb.

My practice is to set my stakes *for years ahead*, and not stop to parley with Mr. Stingy's penny-wise and pound-foolish policy, which is ever suggesting that it will not pay to feed so much grain to stock. I mark out the course—pay or no pay being the motto—to keep my cattle improving, summer and winter—to feed them all I can induce them to eat—not to try to keep them on as *little* as I can—to produce a good lot of beef, which will always command a good price; to make a good lot of manure, and to apply it with care to the soil; and to raise good crops; and to keep the soil good, and always improving a *little*. After a while the pay will begin to come.

The Fourth Year in Feeding Stock.

Now, we want to maintain a firm, steady, inflexible perseverance in feeding this year, or we lose much of the profit of the previous years. When a drover inquires for bullocks or fat cattle, tell him you have none to sell; and if urged to fix a price on them, it will be better to fix it at twenty or thirty dollars *above* their true value. But do not be deceived in their weight. A young bullock will often weigh like lead; and a young farmer ought to *know* what the weight really is, and how much they are worth per pound, before fixing a price.

In autumn of the fourth year—which is as far as I have ever been in stock feeding, and farther deponent sayeth not—let not the stock fall away as the grass begins to fail; but, if no meal is at hand, let each one have a few quarts of corn daily. A quart or two of corn and barley meal will be better. Keep them improving all winter. Don't get the "blues" because they eat so much. Pay day is just a little ways ahead, when you will have a pocket full of cash for your long faithfulness. Do not wait until the beginning of winter, until your cattle begin to grow poor, before you feed them any meal; but begin at once to feed them at least two quarts of meal, with cut straw, corn-stalks and hay, and never neglect roots of some kind. Instead of *diminishing* the quantity of meal mingled with cut straw, increase it from month to month. About the first of March, as warm weather approaches, if your stock have been kept as recommended, their appetites will begin to call for a little more meal; and they may be fed of buckwheat and Indian corn, and oil-meal if it can be obtained, six quarts per day. Some animals will need *eight* quarts per day, and it will pay well to feed them that amount. The skillful feeder must exercise his own judgment a little in this respect, as it is impossible for any man to tell on paper how to manage every animal, as they will often require very different management.

At this stage of feed we may begin to make calculations for

Finishing Beef Cattle for the Shambles.

Now, if the young farmer has paid that attention to saving, making, and applying manure to his soil, during the three or four previous years of feeding stock, which he should have done, he will have a few acres of early pasture, designed particularly for giving the *finish* to his meat; and as soon as the grass is large enough for a tolerable good bite, let the animals be fed in the morning one quart of oil-meal mingled with two quarts of Indian corn meal, with one quart of buckwheat or barley meal, with a half bushel of cut straw and hay; and then about ten o'clock drive them to pasture, and let them graze about one hour, when they should be returned to the yard and fed as usual. After three or four days have elapsed, they may be allowed to graze two hours. But as soon as they have eaten enough they should be yarded, as they will soon tread down and injure more pasture than they eat; and by racing and romping will use up half as much flesh as they have taken on. Let this practice be contin-

ued for twenty or thirty days, not diminishing the oil-meal and other meal with cut straw, twice a day. If grass is abundant, I would not feed more than one peck of cut straw at once. But it will be much better to feed the meal mingled with *some* cut straw, than to feed it clear. At such times, and in fact during the entire year, I let my stock have access to salt.

The foregoing system of management has never failed to produce tip-top beef, which butchers will always be willing—or always will, whether willing or not—purchase at an extra price. Now, after the stock have been fed on grass for a few days, the meal will tell of a large profit; and

The Stock will be Ready for Sale.

At such times, my practice has been to invite some responsible butcher to see them, and agree to take them after they have been feeding on grass for about a month. Beef fattened in this way will, almost always, command from one to two cents per pound more than that which has been fattened in a hap-hazard way; and if a man understands his business, butchers will not expect him to accept the price paid for ordinary beef.

There is another thing of great importance, in finishing up the beef at the former part of the grass-growing season. It is very important that the stall-fed bullocks are well fitted for market, before butchers can obtain a good supply of second-rate, "slippery," or only grass-fed cattle; else, the price of extra beef will be brought into competition with cattle of an inferior quality.

S. EDWARDS TODD.

[For the Country Gentleman and Cultivator.]

Experiments with Superphosphate of Lime on Indian Corn.

MESSRS. EDITORS—I have read with much interest all that has been published in the COUNTRY GENTLEMAN, in relation to superphosphate of lime, for a number of years past. In regard to its use, I find that with some of your correspondents it has been very beneficial; with others it has done no good at all. I do not remember, however, as any one of them has made trial of it more than one year, excepting in one instance where it was tried two years. Perhaps if it had been tried a number of years it would have produced different results. Having used it myself for six years past in growing my Indian corn, some years with as good effect as any I have seen published, and some years with no effect, perhaps an account of my success with it may help to explain the cause of its uncertain operation.

The land on which I grow my corn is white pine plain land. About one hundred years ago it was a "rye field," and had been used for that purpose until it was worn out, when it was allowed to grow up to its natural growth, white pine. Over thirty years ago, a part of the field was cleared of its wood and made into a pasture for cows, and was used for that purpose twenty years. The remainder of the field I have had cleared up and brought into cultivation as I have had occasion for it, within twelve years. I mention these particulars, because it is generally supposed that superphosphate of lime has a much better effect on old pasture land than on new, or recently cleared land, a supposition which, however true in theory, does not appear to be very well supported by my facts, perhaps because the so called superphosphate of lime does not contain a *super*-abundance of *super*-phosphate of lime, or of phosphate even.

In the spring of 1855, a portion of the old pasture land had at the rate of about six cords per acre of barn cellar manure spread on, and plowed in eight inches deep. It was prepared for planting with corn in hills, three and a half feet apart. Into the hills of one-third of the piece, I had a large tablespoonful of superphosphate of lime dropped with the seed and covered at the same time the seed was. Another third of the piece had a handful of the Lodi Co.'s poudrette put in the hill in the same way

the superphosphate was. The other third of the piece was planted without anything in the hill. As soon as the corn was up two inches high, the part that had the superphosphate applied could be very plainly distinguished from the rest of the corn by its darker green color and stouter appearance; it soon took the lead, and kept ahead of all the rest of the corn all through the summer, so that the difference could be seen at any time as far as the rows could be distinguished. The part which had the poudrette in the hill was much better than that without anything, but not near so good as that with the superphosphate. There was a frost the first part of September, which damaged all of the corn except that which had the superphosphate applied, which was all well ripened before the frost, and was the only part that produced good, sound, well ripened corn, fit for seed.

Seeing so good effects from superphosphate of lime in the preceding case, I concluded at once that it must be the very thing needed for my land, so I used it in planting all of my corn in the years 1856-'7, in which years the corn was planted partly on the old pasture land and partly on the newly cleared land, after plowing in about eight cords per acre of barn cellar manure, and preparing for planting in my usual way. I could not see but that it had just as good effect on the newly cleared land as on the old pasture.

In 1858, my corn was planted partly on the newly cleared and partly on the old pasture land, having prepared the land as in the preceding years, differing in this respect only, that this land had been manured well with barn cellar manure and planted with corn in 1854, the year before I began to use superphosphate of lime. That on which I had my corn the three previous years, had probably never been manured before those years. I applied the superphosphate of lime in the hills of all the corn, except a few rows left for comparison, as usual. When the corn came up I was quite surprised to find that there was not the least difference to be seen, nor could any difference be seen at any time in the season. Of course I supposed the fault was in the superphosphate; but one of my neighbors had used on his cornfield the same kind of superphosphate that I had used on my own this year, with more surprising effect than I had ever seen before. On land similar to my own, which had been in pasture for forty or fifty years, he applied a good manuring of barn-yard manure, and at planting put superphosphate in the hills of all the corn except about a dozen rows on one side of the piece, which were neglected from not having enough for the whole piece. The result was, these dozen rows came up very poor, and looked extremely miserable, by the side of the rest of the corn, all through the season, and produced hardly corn enough to pay for harvesting. The rest of the corn was very stout and thrifty from its first coming up, and was one of the best fields of corn in the neighborhood. This was the same kind of superphosphate of lime that I had used, or at least it was marked with the same manufacturer's brand, and bought of the same agent. Why then did it not have as good effect on my land? Could it be because my land had been well manured four years before? One more trial of it will help to decide these questions.

In 1859 I planted my corn partly on some of the land that had been manured in 1854, and partly on the newly cleared land that had never been manured before preparing it for corn this year. Super-phosphate was applied in the hills of all of it. On the newly cleared land it had as good effect as it ever had had before. On the old land that had been manured in 1854, it did not have the least effect, neither when it first came up, or at any time during the season. This satisfied me that it was of no use to apply superphosphate of lime to my land for corn after the land had been once well manured, or at least till more than five years after. Perhaps if I should let the land lay in grass till it had got completely worn out it might have a good effect again. The past year I have used but little superphosphate of lime, but the result of it confirmed the above opinion.

Besides these experiments of my own, I have noticed its effects in a number of instances when used by my

neighbors, and I have found that in all cases where it has had a very marked good effect, it has been on old worn out land that had not been manured for a long time, if ever before. This appears to be the case, also, in the instance mentioned by Mr. HOLBROOK, Co. GENT., vol. 16, p. 157, and also in the experiments of Jos. B. WALKER, Esq., reported by Mr. BARTLETT, vol. 16, p. 299, and I have no doubt that if the condition of the land had been stated, it would be found to be so in many other instances.

On old worn out land I think a good article of super-phosphate of lime, considering the ease with which it can be applied, one of the best things that can be used in the hills of corn to give it a start, and help it along through the season; but it is a costly manure at the rate of over fifty dollars per ton, the price it is sold at here. I think, however, that it may be used in less quantity than what I have used with equally as good effect. I have seen a *tea-spoonful* in the hill have as good effect as a *table-spoonful*, or even a handful, but in this case it was a genuine good article of *super-phosphate of lime*. On land that is in as good condition as farmers ought to keep their land, even a good article will not "pay," so far as my experience and observation extends.

The above is a simple record of *facts* as they have occurred in my "every-day farming." They are not offered for publication with a view to puff any particular brand of super-phosphate, and for that reason I have withheld the manufacturers' names. I have used several different kinds, and found one about as good as another; but it will be remembered that some of it was used seven years ago, when some super-phosphate is said to have been of a better quality than it is now-a-days, and which some small experiments I have made, but have not mentioned here, go to prove. A. C. Concord, N. H.

[For the Cultivator and Country Gentleman.]

SUNDRY NOTES ON BEES.

A few days since I received several numbers of the French Bee Journal, now in its fifth year, published in Paris and edited by M. H. Hamet. I extract from it the following, which will doubtless interest some of your readers:

"The year 1860 was a very unfortunate year for the bee-keeper. Its equal does not occur more than two or three times in a century. Some good may result from every evil, and this year has fairly proved the absurdity of the belief, still prevalent here and in many countries, that bees require no care, and the more neglected, the better they prosper. Throughout the greater part of France, only intelligent and careful bee-keepers have succeeded in wintering their stocks the past season, without serious loss.

In every country the bee requires care adapted to the climate, honey, resources, &c., and apart from general principles, which must be observed every where, different situations require the observance of specific rules or management, specially adapted to the locality."

The French Bee Journal contains a record of passing events interesting to the bee-keeper—calendars of the prosperity of bee culture in distant parts of the country, and reports of meetings of societies and conventions. In several instances I noticed that the societies held their meetings on Sunday—for instance, the first Sunday of every month.

Reports from distant points in our country, would be very instructive and add much to the interest of your "bee-keeper's department."

In treating of burial of bees in winter, several writers state that they think the advantages gained are too slight to repay the trouble and expense; still they recommend it for northern countries where the winters are very severe.

Straw hives are preferred in France. Some state that bees kept in them swarm earlier and oftener. Depredations of mice, one objection to them. Wood objected to on account of extra cost. Hives made of wood are more durable. From the price of labor here, a well constructed straw hive would cost more than one in wood.

Many different forms of fumigators are given, all bearing some resemblance to either a pepper-box or a syringe. Smoke from dry rotten wood blown in the hive, will in most cases answer. The cheapest and best fumigator, is a common pipe with large bowl, partly filled with tobacco—light and blow the smoke through the stem between the ranges of comb. Very little will answer—be careful not to use too much.

All hives containing clean combs, in which the bees have died during winter, place in a cool dry cellar, protected from

the bee-moth. They are valuable to lodge your first swarms in.

To avoid robbing, it is preferable to feed inside the hive at night, all stocks that have not sufficient stores for winter. Feed as rapidly as possible; otherwise they will be stimulated to breed actively, and thus waste much food, and if severe cold occur, much brood may be chilled.

How much food can a swarm consume or store in a day? One writer says 28 lbs.

The Germans use rye flour and oat meal as a substitute for pollen. The French state that bean flour answers equally well.

A Bee Almanac is published in France, containing the usual information, and in addition, Natural History of the Bee, Monthly Management, Bee Statistics, Advertisements of Dealers in Bees, Honey, Hives, Wax, &c.

Pruning is seldom attended with any benefit. In operating never destroy any brood.

Artificial swarming by aid of smoke and drumming, is well described by one Jayme Gil, Spain, 1621. To ascertain the presence of the queen in the empty hive, when not otherwise indicated, he placed under the hive a black cloth, and if present, in a short time eggs would be found upon the cloth, there being no comb to receive the eggs.

The principle to be observed to unite colonies successfully is to bring them into the same state, "under the same impression." This is generally done by smoke and drumming. If not in the same condition, they will fight.

Is there any mercy in not killing bees in autumn? As the worker bee lives less than a year, the same worker cannot collect honey two seasons; so we think that when one has more stocks than he wishes to winter he should not be over scrupulous on this point.

Shallow feeders made of unglazed earthen ware are recommended by some writers.

Bees sometimes kill their queen after an early spring examination. This sometimes occurs in examining in the autumn. It is therefore advisable to disturb as little as possible at these seasons.

In a late No. of the Co. GENT., Mr. QUINBY criticised freely an article of mine, in which his experience differed from my practice. His management is undoubtedly better suited to his latitude than mine. We feel pleased that Mr. QUINBY does not allow friendly relations to interfere with a frank expression of opinion. E. P. New-York.

[For the Country Gentleman and Cultivator.]

To Farming Tanners—Tan-bark for Potatoes.

A dealer in the "swamp" once observed to me, his father worked a farm and a tannery—and used to say that some seasons the tannery paid for the farm, and at others the farm paid for the tannery. Still the farm was the pet, and my friend thought the tannery was paying for the farm all the time. Be that as it may, it is certain the combined results were abundantly satisfactory.

In THE CULTIVATOR of August 1859, page 259,* is an article headed "Tan-bark for Potatoes," detailing the practice and experience for 35 years, of a Mr. Bamford in this matter. He says that in 1857, he raised 675 bushels—not a rotten one among them—to the acre, with no other covering than waste tan. Referring the reader to the article, I subjoin an experiment suggested by the foregoing, in 1860:

April 23.—Plowed and furrowed—about four inches long stable manure in bottom of furrow, well tramped down—set the potatoes, peach blows, whole, 12 inches apart—covered with a light layer of straw, and over that about six inches of tan. May 23d, up. June 8th, plowed and dressed flat.

No other dressing, except keeping weeds down with hoe. Produce large and sound. It is to be observed that the tan was of oak bark, as it was also, doubtless, in the English case. Intend trying the same more largely this season. C. Salisbury Mills, March, 1861.

SEEDS, &c., BY MAIL.—An important change was made in the post-office law at the late session of Congress. Seeds, plants, cuttings, &c., can now be sent by mail, at the rate of one cent per ounce for 1,500 miles—over that distance two cents per ounce. The packages must not exceed eight ounces.

"BALLOON FRAMES"—13th Article.

[Written exclusively for the Country Gentleman by GEO. E. WOODWARD, Architect and Civil Engineer, No. 29 Broadway, N. Y.]

In the construction of balloon frame houses the studs for those partitions that run through the building are not cut separately for each floor, as in the old mode of framing, but are preserved entire, or spliced when required, in the same manner as the outside frame. The studs pass between the joists of each floor, which rest upon a girt 1 by 4 inches, let into the studs. The joists are locked over this girt by cutting an inch notch on the under side, and lap each other from 8 inches to one foot, as shown fig. 18.

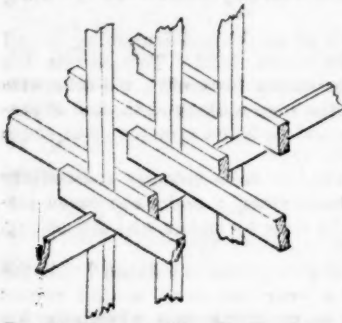


Fig. 18. Manner of framing Partitions that run two or more stories, unless both ends of the floor joists are notched, to be locked over the girts.

The flooring, when laid, is nailed to all the joists, and each joist, should be brought close up alongside the stud.

Figs. 19, 20 and 21 are the side view and end view, and plan of joists, showing the manner of doing the work. The side girts on the partition stud-ding should be put on an inch higher than the side girts on the outside frame, joists are notched, to be

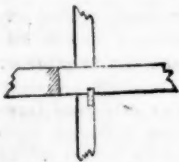


Fig. 19. Side View.

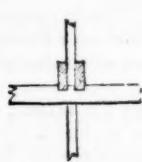


Fig. 20. End View.

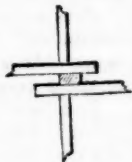


Fig. 21. Plan.

Showing manner of framing partitions.

Fig. 22. shows the manner of arranging joists over a

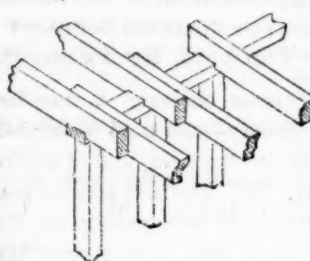


Fig. 22. Showing manner of framing partitions that run only one story.

partition that does not run above one story, or that which has no partition over it on the next floor. This is like the old mode, except that the joists are notched and locked over the plate. The object of lapping and locking joists, is to make them a continuous tie from one side of the building to the other, and when the flooring is nailed on, they are practically as strong as if they were in one solid piece. This prevents bulging, and the joists of all frames, whether balloon or otherwise, should be arranged in this manner. No matter what may be the width or length of a balloon frame building, the continuous tie of the joists in one direction and the flooring in the other, is of such strength as would require a superhuman power to separate them in the direction of their fibre. We have heard a western fire company swear worse than a crew of pirates in attempting to pull one down, and while the old-fashioned frame is but a plaything in their hands, they hate most cordially to grapple with the light sticks of the balloon.

It will be observed on looking again at fig. 18, that there are three continuous ties, in three different directions—thus, up and down, lengthways, and crossways, and that every joint in the frame, whether outside or inside, has each of these three different conditions of strength. This applies to the naked frame. After the flooring is laid and the outside boarding on, the building becomes so knit together, laced and interlaced, that it is as one entire piece.

The principle of balloon framing is the true one for strength, as well as for economy. If a mechanic is employed, the balloon frame can be put up for *forty per cent. less money* than the tenon and mortice frame. If

you erect a balloon frame yourself, which you can easily do without the aid of a mechanic, it costs the price of the materials and whatever value you put upon your own time. If you have any doubt of its strength, security, durability and economy, you can find on every farm and hillside, and in every town and city of the great West and far West, from Lake Michigan to the Pacific, examples by the thousand that will disprove your fears.

We do not advance here any theories, nothing but what can only be considered a novelty among the older settled States, and a most valuable practical reality in those that follow the star of empire. The information that we are endeavoring to put into an understandable form, is the result of a thoroughly practical experience, and has been collected and collated with great care.

[For the Country Gentleman and Cultivator.]

WINTERING CATTLE ON CORNSTALKS.

A FEW FACTS FOR OLD HURRICANE.

MESSRS. EDITORS—I read with much interest an article entitled "Cornstalks for Fodder," in the COUNTRY GENTLEMAN of March 14, signed "Old Hurricane." He first touches upon the experience of a writer from New-Hampshire, and of Mr. Cornell of Ithaca, saying "that he believes their statements to be widely at variance with the every day experience of those who feed cut cornstalks." He then gives us his own experience in a very well written article; and if all our knowledge of feeding cornstalks was derived from that article in your truly valuable paper, we should say at once, with our good friend "Old Hurricane," that "bass wood saw logs cut up, were fully equal to cornstalks for all purposes of feeding stock." But as we have some little experience in that line, we feel ourselves invited to give it, as we are in no way, directly or indirectly, interested either in the sale or manufacture of any cornstalk cutter whatsoever, except that we think there is too large a profit on them.

In the winter of 1858-'9, we commenced feeding twenty two-year old steers and eight oxen on cut cornstalks. We used one of Dutton's machines, worked by one horse, on a double treader. They were fed on *nothing else*, until within two weeks of pasture, when the stalks gave out and they were fed hay.

Three pairs of the oxen were sold readily at the highest market price. The steers we purchased in Sept. '58, at \$20 per head, and sold in June and July for 4½ cents per pound on foot, averaging \$47.50 per head. This we think sufficient comment on their coming out in the spring as "mere carcasses of bone covered with hide."

In the winter of '59-'60, we wintered 30 head of cows and steers in the same way, with cornstalks cut by the same machine, and all of them came through the winter in as good condition as any cattle that are not stall fed for beef.

The winter just passed, we commenced feeding 30 cows and one pair of oxen, with cornstalks cut in the same way; but finding the Dutton machine working rather too slow, we purchased a large one made by Hickok at Harrisburg, Pa., for which we paid \$75, and which we think *too much* for the amount of work there is about it. Now we do not know Mr. Hickok or any of the Hickok family, but instead of joining with our good friend "Old Hurricane" in having him "indicted" for making and selling cornstalk cutters, we feel to thank him for making the best machine we have ever seen of the kind, and while we think it costs too much, would not take *three times* that amount for ours, unless we could get another equally as good. It cuts and grinds the stalks, and with two horses on the treader, two men and a boy, can cut enough in half a day to feed our stock a week. From about the 20th of November up to this date, we have not fed our stock anything but cut cornstalks, excepting the cows we were milking; they have had 12 quarts of brewer's grains per day, or an equal quantity of cut turnips each, while they were being milked. On the 15th January we sold three rather poor milkers for beef, they having had the same feed exactly as above stated.

Our cows are all stabled, and are fed one large corn-basketful of cut stalks per day each, half in the morning, and half at night. The oxen and five cows have had *nothing else*, since they came from grass. Some ten or twelve more of the cows have been fed only stalks as they have become dry, although with the above feeding of grains and stalks, we can milk nearly all of our cows to within a month of calving. We have not carried out ten basketfuls of butts this winter, although all our stalks are cut up by the ground; and when the cows are let out in the morning, they require some watching until they have galloped around the yard a few times.

Now I would like to have "Old Hurricane" feed a pair of oxen and 30 cows on bass wood saw-logs and brewer's grains for three months and a half, and then compare the animals. *They might* kick up their heels more than ours do on cornstalks, but we think not, although we have never tried them.

YOUNG HURRICANE.

Claverack, N. Y., 1861.

[For the Country Gentleman and Cultivator.]

COST OF THE TURNIP CROP.

EDS. CO. GENT.—I stated that Mr. Brodie's turnips cost him less than three cents per bushel. I saw Mr. B. a short time since, and he kindly allowed me to take a copy of the account; and here allow me to say there are many things, seemingly trifles, but which make a material difference in cost of so bulky a crop as roots; for instance, the manner of sowing, the distance of hauling to the place of storage and manner of storing, and cultivating the crop, whether most of this is done with horse, or all by hand. Mr. B., as he says, "drills in the dung," that is, he first furrows out the ground, then hauls on dung with horse-carts—spreads dung in furrows and turns furrows back on to the dung, and sows on these ridges—the rows 27 inches apart, which he does with a drill he had made to order as near as might be like those used in Scotland. A roller goes before the seed-drill to pack and pulverize the earth, and another follows to roll in the seed. It sows as fast as a horse can walk. He also had a scuffler made, with which to work the crop, and with which he does all the work except thinning—goes through with the scuffler as soon as the rows can be distinctly seen, which is say ten days after sowing, and again as soon as turnip leaf or rough leaf appears, when the plants are thinned to from 9 to 12 inches. After this, goes through with scuffler as often as necessary.

Mr. B. says perhaps some crops can grow with weeds, but turnips cannot. In harvesting he pulls the root with the left hand, and with knife in the right hand clips it, and one who has been in the habit of pulling and laying them down to be topped afterwards, would be surprised to see how expeditious this is.

He has a basement under his barn, 30 by 114 feet, in which is a large root cellar and stables—and in hauling in, he has only to drive in and dump his cart.

His account of cost of crop of 1859, is:

To plowing, \$2—cross plowing, \$2—harrowing, \$1—drilling, \$1—covering dung, \$1.....	\$7.00
To sowing and extra rolling, \$2—to 2 lb. seed, 80 cts.—cultivating, 75 cts.....	3.55
To 12 days thinning, \$12—cultivating, 75 cts.—to 8½ days harvesting, \$2.50.....	21.25
To 2 days with horse and cart, \$3—to rent of land or interest, \$5.....	9.00

Total expense of cultivating a little over one acre..... \$40.80

CREDIT.

By 1,510 bushels turnips, costing, as above, about two cts. seven mills.

Mr. B. makes no account of manure, as he considers that cleaning the land in cultivating the crop a fair offset for the dung the first year. He also makes the same allowance in his corn crops, which cost him \$13.25 per acre, which, at 50 bushels per acre, makes his corn cost 26½ cents per bushel. Now at these rates, which is the cheapest feed? And how much will different cultivators vary from this? Very much no doubt. Some will probably grow corn at less cost, and perhaps roots.

Jefferson Co., N. Y.

ADVICE FOR THE TIMES.

Secession and depression have been the themes of farmers all winter; they have subscribed for the daily papers, and anxiously read every paragraph on the condition of the nation. We would quote to them an excellent admonition, 3000 years old, "He that observeth the winds shall not sow, and he that regardeth the clouds shall not reap." He that is constantly looking at the course of the political breezes, and scanning the clouds of nullification, cannot attend to his farming. Dismiss all political newspapers, or the nearer to this the better, and then *go actively to work*. The news, when there is any worth listening to, will be sure to reach your ears—it will come to you; you need not go for it. If every farmer attends faithfully to his calling, and raises abundant crops, we shall be sure to have a prosperous country. If prices are likely to be low, raise more; a thousand bushels of wheat at 80 cents will bring as much as five hundred bushels at 160 cents, and the owner will live more cheaply. Nothing is more absurd than to say—"Prices are low; I guess I won't raise much this year." How will this course ever make a prosperous farmer, or give prosperity to the country?

[For the Country Gentleman and Cultivator.]

Nutting's Fanning and Assorting Machine.

MESSRS. EDITORS—Permit me through your columns to call attention of farmers to a trial I have just been giving Nutting's Fanning and Assorting Machine. Like many others, I was somewhat prejudiced against the machine, thinking it advertised to do too much; but after a thorough test, I am fully convinced that it is one of the best, and certainly one of the most needed of Agricultural Implements.

I had, for example, 16 bushels of screenings, (wheat and oats,) which were blown over the sieves in running 125 bushels spring wheat twice through one of the best of the modern fanning mills. In this condition, it was useless to me except for feed, although the wheat in it was among the best and plumpest I had, and the whole was worth probably about 37½ cents per bushel. I run this mixture once through the Nutting Machine in about an hour, with the following result:

I had of good marketable wheat, 5½ bushels, worth \$1 per bush.,	\$5.50
10 bushels oats, at 30 cents per bushel,.....	3.00
And one peck wild mustard and pigeon-grass seed,.....	0.00

Estimating the 16 bushels of screenings at 37½ cents,..... \$6.00

Leaves my actual gain,..... \$2.50

I then put in a grading screen, and run through a part of the above wheat again, separating it into two qualities, the first of which was the very best of seed.

The trial with winter wheat was even, if possible, more desirable. The wheat was very foul with cockle and wild pea. It was assorted into three grades—the first of which was a perfect specimen of pure seed—the second was about like the average of common marketable wheat, and the last was screenings and broken wheat.

The machine has recently undergone a thorough improvement, through the persevering efforts of Mr. Warren, and from my actual experience, I do not hesitate to say that it is not only the best *Chaffer* in use, but the only machine the farmer should use who has any desire to sow only *clean* and *pure* seed.

H. C. FILLMORE.

P. S. One of my neighbors has since tested the machine with grass seed, and says in this respect also, it has no equal. H. C. F. *Manlius, N. Y.*

CARE OF YOUNG PIGS.—A writer in the Ohio Farmer says that farmers sometimes lose young winter pigs by feeding them on heavy, raw, and cold food. They need their food cooked and given warm; a bran and milk mash, and a few boiled potatoes cut fine, are better than richer food, which is apt to scour them.

[For the Country Gentleman and Cultivator.]

RUTA BAGA or SWEDISH TURNIP.*Practical Directions for the Cultivation, Storage, and Feeding-out of Ruta Bagas or Swedish Turnips.*

By JOHN RATCLIFFE CHAPMAN, C. E.

Difficile est proprie communia dicere.—HOR.

The soil best adapted for the growth of sound, solid Ruta Bagas, is strong loam or strong clay, underlaid by a dry subsoil. If the subsoil be surcharged with water, or if you allow water to stand in the slack places on the surface of the land for the want of a few grips or open drains, the turnips will be hollow, rotten and worthless. Turnips will do well after any crop, if the land be in fair condition, but best after potatoes or hoed crops, on which manure has been plentifully bestowed.

The best course of cultivation is to plow the land in the fall 10 inches deep, if the soil will admit of it, and plow again in the spring before weeds grow enough to hinder the working of the seed planter. Keep the weeds under by the use of a cultivator, and about the 15th of June plow again; then drag extra well, and pass over the roller. If the land be stiff and lumpy, use alternately the cultivator and the roller, till the soil is in fine tilth. A cultivator will bring up the lumps to the surface much better than a drag, and then the roller can have a chance to crush them fine. A solid roller, 18 inches in diameter, is much better for breaking up lumps than a larger one.

As soon as the soil is fine enough, and it will be as fine as an onion bed, and free from roots and other obstructions to the seed sower, if the above directions be followed, take a span of steady horses and a good plow and *set the ridges*. Now this ridging is easily done, *if you know how*, or have ever seen any one make them, but it is rather blind work upon paper. It is done thus: set the plow so that she will cut about four inches deep; run the first furrow up the dead furrow, and turn the slice upwards so as to widen and deepen the dead furrow; gee round and make your off horse walk close up to the half formed ridge, and turn this slice tight up to the first one, *and you will have made a ridge*. Haw round and put the nigh horse in the last furrow; then set your plow so that she will cut five or six inches deep, and turn another slice; gee round—set your plow to the four-inch gauge—keep the off horse close up to the edge of the last half formed ridge—turn another slice tight up, *and you have made another ridge*. Proceed in this manner till you have finished, taking care to come out even at every dead furrow. If these ridges be made with a common plow, they will be about two feet six inches apart, center and center.

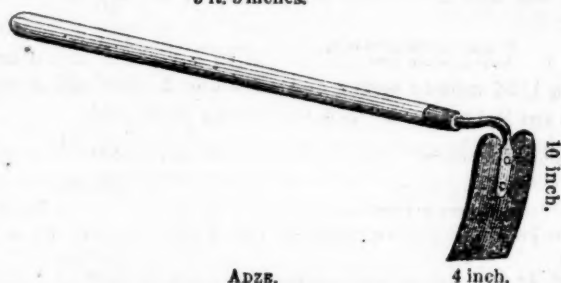
Now take your lumber wagon and fetch on the rotten manure, which has been previously composted for this purpose. Drive lengthwise with the ridges with two men to a wagon, and drop the manure evenly and carefully between the ridges at the rate of 30 loads to the acre, more or less, according to the need of it. After the manure is all placed, take the plow and *split the ridges*, right and left, so as to cover the manure, at the same time making a new set of ridges, gauging the plow as above directed, and then roll them carefully lengthwise. (As soon as I get the manure on and before I split the ridges, I always sow broadcast one barrel of fine bone dust and one barrel of common salt to the acre, with marked advantage.)

Now take your seed sower (mine is in the shape of a wheel barrow and self-covering, procured of Emery & Co., Albany, price \$7,) and put in your seed at the rate of one and a half pounds to the acre. When sowing you must keep your eye upon the seed so as to be sure it is falling regularly. With this machine I can sow an acre in two hours with ease, but where there is much to do I should prefer a Scotch field drill with three coulters, sowing three ridges at once and fertilizers (if needed) at the same time.

As soon as the young plants are well up, you must watch them carefully, and if you detect the fly at work you must sprinkle the rows with unleached ashes, when the plants are wet with dew in the morning. These ashes will help the turnips, and keep off the fly to some extent. You must repeat the ashing after every shower till the plants are in the rough leaf, when they ought to take care of themselves.

When the plants require hoeing and thinning—I always let mine stand till they are pretty large, so as to draw one another up for the purpose of *lengthening the bulb*—take a corn cultivator and take out the two outside hind teeth, and then set the frame so that the remaining teeth will cut within three or four inches of the plants—hitch on a horse and go twice in a row. Then take a turnip hoe eight to ten inches long on the bit, cut square across the ridge, weeds, plants and every thing, leaving a small bunch of turnips every twelve inches. Let a boy follow each hoeman and thin out each bunch of plants, leaving one or two plants, according to the judgment or fancy of the owner. An expert will hoe out an acre in a day, and a smart boy will keep up with him. This is all the hoeing and weeding they will require, with the exception of a little hand weeding about the first of September.

3 ft. 3 inches.



ADZE.

4 inch.

Ruta bagas ought to be dug up and cured from about the 20th October—certainly before the first day of November, anywhere in Central New-York. I use two implements for digging turnips—one made out of an old cross-cut saw blade, exactly in the form of a carpenter's adze—the other a common turnip drag, with extra long teeth.

4 feet 6 inches.



DRAG.

With these tools two men can dig and bury up 200 bushels of turnips in a day, with the help of two boys to carry them to the heaps. One man goes ahead with the adze and cuts off the tops of the turnips with a single blow; the other follows and strikes in the drag beyond the turnip, and *jerks it out like fun*. It is advisable to cut two rows of tops at once, and bring four rows of tops together, and to drag one row at once and fetch in two rows of turnips together, to make it better for the boys to gather them.

RYE FOR PRAIRIE PASTURE.—A correspondent of the Chicago Farmer's Advocate, writing from Menard Co., Ill., thinks rye of much value for pasturage in that section. It should be sown in the spring as early as the season will permit, and may be pastured in June, July and August, and plowed up and sown to wheat in September. It should be fed down pretty closely in June, or much of it will head out, and be likely to mix with the wheat. It furnishes excellent pasture for swine, but they should be accustomed to it gradually, and cows yield more butter than from any other pasture he has tried. As a green manure it is equal to clover, and sown thickly, will smother any growth of weeds.

[For the Country Gentleman and Cultivator.]

Products of a Delaware Co. Butter Dairy.

MESSRS. EDITORS—Through the season of 1860 I kept and milked eleven cows, two three year old heifers, and one two year old heifer, fourteen in number:

From which I sold..... 3,264 lbs. butter.
I estimate the milk, butter and cream used in family as,..... 200

Total amount made..... 3,464 lbs.
Allowing three heifers to be equal to two cows, I had the same as thirteen cows—average amount of butter made from each cow..... 266 lbs.

In 1259 I kept eleven cows and one two year old heifer, and two three year olds, and

Sold from them..... 2,951 lbs. butter.
Used in family as estimated..... 200

Amount made..... 3,151 lbs.
Allowing, as before, the three heifers to be equal to two cows, I milked that year also the same as thirteen cows. Average per cow..... 242 lbs.

In 1858 I had ten cows through the season, and one cow until Aug. 1, when she was sold, and two 2 year old heifers, and one 3 year old. Estimating the three heifers and the cow that was sold Aug. 1 as equal to three cows, I had that season the same as thirteen cows, and

Sold from them..... 2,550 lbs.
Used in the family..... 200

Whole amount made..... 2,750 lbs.
Average per cow..... 211 lbs.

In 1857 milked eleven cows and one 2 year old heifer and two 3 year olds, equal to thirteen cows, and

Sold from them..... 2,631 lbs.
Consumed in family..... 200

Amount made..... 2,831 lbs.
Average per cow..... 218 lbs.

In 1856 had twelve cows and two 3 year old heifers, and

Sold..... 2,820 lbs.
Used, &c..... 200

Amount made..... 3,020 lbs.
Average per cow, heifers and all..... 215 lbs.

In 1855 kept twelve cows and two 2 year old heifers, and

Sold..... 2,920 lbs.
Consumed in the family..... 200

Amount made..... 3,120 lbs.
Estimating the two 2 year old heifers as one and a half cows, I had that season the same as thirteen and a half cows. Average per cow..... 231 lbs.

In 1854 milked eleven cows and two 3 year olds, and

Sold..... 2,611 lbs.
Used..... 200

Amount made..... 2,811 lbs.
Average per cow, calling the two heifers full cows..... 216 lbs.

In 1853 I made over 250 lbs. of butter from each cow kept, but not having any memoranda I cannot give the particulars.

The greatest average yield of butter per cow in any of the eight successive years was 266 pounds.

The smallest average yield of butter per cow in any year of the same time was 211 pounds.

The general average yield of butter per cow through eight years was 231 pounds.

Farmers sometimes raise large crops, or make large yields of produce of any kind for one year when all the circumstances attending are very favorable, or perhaps partly at the expense of another season, but I have extended this statement over eight years, to show what has been the general average production of my dairy for a long time, and also the yearly yield under every variety of circumstance and season.

There may be some difference of opinion in estimating the relative value of two and three year old heifers in a dairy, but I am quite sure, judging from my experience, that a two year old heifer will not make generally more than half the butter in one season that she will after she becomes six years old, and that a three year old should not be rated higher than two-thirds of a cow. In the above statement, however, I have rated the two year olds as two-thirds full grown cows, and the three year olds as two thirds, or as full cows.

The reason why so large a portion of my dairy has been heifers is, I raise my own cows, and all my heifers come

in at two years old. All the cows I milked last season, excepting two, I raised myself, and six of them were all the calves of one cow.

My cows are mostly small in size, and are all of the common breed, excepting the two year old heifer, which is half blood Ayrshire. I value her highly; she came in a little over a year ago, when she was only twenty-two months old, and gave through the season a large yield of milk, and made an extraordinary quantity of butter, yet she grew thriftily and maintained her condition without any extra feed or care, and now promises extremely well for another year. The farmers of this vicinity are indebted to Mr. C. J. HAYES of Unadilla for the introduction of this breed among them. S. L. WATTLES.

Sidney Centre, Delaware Co., N. Y., April 9, 1861.

[For the Country Gentleman and Cultivator.]

Cultivation of the Basket Willow.

L. TUCKER & SON—Having read an inquiry in your paper, asking how to grow the basket willow, I herewith give my mode of culture.

Drained swamp or bottom land, is considered the best soil, although almost any kind of moist or sandy soil will produce fair crops of willow.

Prepare the ground by plowing and harrowing, so as to have a smooth even surface—set the cuttings by stretching a line across the plot, and push the cuttings into the soil, leaving one or two inches above ground, the right end up, and eight inches apart in the row—the rows to be wide enough apart to admit the cultivator.

Cultivate and hoe sufficiently to keep down the weeds the first summer. They will need no further cultivation ever after.

If good fresh cuttings are used, and set early, they will make a growth of five to six feet the first summer. They may be set as late as June and root well, but will make a less growth of top the first season.

Cut all close to the ground late in the fall, during thaws in winter, or early spring, so as to have them out of the way of other farm work. Bind in bundles, keeping the butts even, and set up after the manner of setting up corn. Every willow should touch the ground.

In June they are run through a willow peeling machine, and bound in bundles, when they are ready for market. The price per ton was last year, from \$100 to \$140—fine willow bringing the highest price.

The willow for basket work is cut every year. Some of the coarser varieties are allowed to grow two and three years for hoops. D. L. HALSEY. Victory, N. Y.

[For the Country Gentleman and Cultivator.]

DRAINING WITH MOLE PLOWS.

EDS. CO. GENT.—Last season I had some 300 rods of mole ditching run through my lowest land. During the fall it was so dry that no water run from any of them. As we had a heavy fall of snow during the winter, there was but little frost in the ground. In Jan. my ditches commenced running, and now discharge all the water that naturally gathers in the sloughs, making the ground as dry as desired. At a cost of 12½ cents per rod, I now have about twenty acres ready to cultivate at a cost of less than \$40. Too much cannot be said in praise of the mole ditchers. They are the thing we need to bring into cultivation thousands of acres of our best and richest soil of Illinois. I understand that the owners of some of the machines offer to run the mole five feet deep for ten cents per rod. C. G. TAYLOR. Rock Island Co., Ill.

DRY MANURE FOR CORN IN THE HILL.—In manuring corn in the hill the use of perfectly dry manure is to be avoided, as it will take the moisture from the soil, and thus delay the vegetation of the seed, and, in the case of hen manure and guano, destroy it.

[For the Country Gentleman and Cultivator.]

WEST SPRINGFIELD FARMER'S CLUB.

Report of the discussions of the West Springfield (Mass.) Farmer's Club for 1860-61:

I. Is Stock Raising Profitable in the Connecticut Valley.

Various opinions were advanced upon the subject, some deeming it more profitable to raise their own than to purchase them elsewhere, while others maintained the opposite. It was thought that stock raising might be made profitable if rightly managed. One gentleman estimated that a calf six months old cost him not more than six dollars—that it is best to feed stock different kinds of food daily—cornstalks, cut and mixed with meal, were highly recommended—that it was not best to winter an animal that would not return an equivalent of twenty five cents per day in some form—that a cow consumed from two to three tons of hay during winter, which cost from \$40 to \$50—that Durham stock are best for milk, Devon for work. Sheep raising was thought to be profitable if we killed all the dogs, and much more so if the dogs kill all the sheep.

II. Is it Profitable to Use Manure in Farming?

The President of the Society said it was a subject which deeply concerned every farmer, but which was altogether too much neglected—that few could tell from actual experience the best method of applying manure. The Society decided that we ought to use some absorbing substance to retain the urine—either sand, muck or common earth—and incorporate the manure well with earth to prevent decomposition and the consequent loss of the fertilizing properties of the manure—that manure ought to be covered from rains or exposure to the sun—plaster scattered over the manure prevents the escape of the ammonia, being retained by the sulphuric acid in the plaster—that the nearer the manure is applied to the surface of the land, the sooner the crop will be benefitted. Accordingly it was thought best to spread the manure upon the surface after plowing previous to harrowing, letting the harrow cover it as much as possible. Some spoke of obtaining large crops of wheat by covering the manure with a small plow.

III. Feeding Stock.

All agreed that regularity in feeding was most essential—that it is best to feed green crops as much as possible, either cornstalks, rye or clover. Mangolds were thought to be superior to ruta bagas, although nothing definite has yet been determined. Clover and rowen hay was considered best for milk. It was thought that cattle ought to be carded regularly.

IV. Seeds and their Planting.

Care should be taken not to set plants of the same species adjoining each other, as for example, cabbage and turnips, which were said to have been hybridised in this way, thereby destroying both varieties for cultivation. All seeds should be selected from plants which have become fully matured. Seed potatoes should be chosen from the medium or larger size, all small ones being discarded as unfit for use. Seed corn should be selected at the time of harvesting, and stored high and dry. Corn should be cut and stacked before harvesting.

It was thought that there was danger of covering seeds too deep in the soil, although a case was cited where corn was planted four inches in depth, and the crop improved by it. Some seeds germinate equally as well if scattered upon the surface as if covered in the soil, among which are the clover and turnip seeds, sown soon after the ground has been plowed, or if sown in beds, covering with mats of straw prevents the difficulty experienced by some of the seeds not germinating.

V. The Renovation of Soils.

Barnyard or stable manure is the best fertilizer—irrigation is an excellent method of renovating lands where it can be practiced. One gentleman spoke of planting a few acres of worn out land the last season as an experiment.

He first plowed in a light covering of manure, then dropped a handful of ashes and guano, mixed, in each hill before planting the corn. The crop flourished finely, and produced from 35 to 40 bushels per acre. This same land, forty years ago, would produce good crops of wheat, rye or corn, with the aid of a little plaster, while now it seemed to produce no beneficial effect, owing to the vegetable matter in the soil having been exhausted by repeated cropping.

Another gentleman spoke of having renovated a number of acres of worn out land by applying plaster, ashes, guano and manure. This lot now forms a fine fruit orchard, the trees, being seedlings, produce fruit of an excellent quality. All barren or worn out lands, if sufficiently improved to produce clover, can ultimately be brought to a state of great fertility by sowing this seed with rye, and plowing under the clover after harvesting the rye.

Ashes are an excellent fertilizer, for they contain the very substances needed for the growth of the plant. Lime has no beneficial effect upon barren sandy soils, for there is no vegetable matter to be decomposed, and even if there were, it would be readily affected by the action of the atmosphere and descending rains. This is the great difficulty experienced in renovating sandy soils, the fertilizers are so rapidly decomposed, and either evaporate or are washed away. This can be obviated by incorporating a quantity of clay in the soil. Lime, when applied to clayey soils, has a most beneficial effect, neutralizing and decomposing injurious acid substances, and extirpating many hurtful weeds and grasses. It acts also upon the organic or inorganic matter in the soil, decomposing certain insoluble compounds, and bringing them into a state favorable to the sustenance of plants. JOSEPH MORGAN, Sec'y.

[For the Country Gentleman and Cultivator.]

No. 26---THE WHEAT MIDGE.

In an address which I delivered at the recent Annual Meeting of our State Agricultural Society, I spoke of some of our most important injurious insects as having been remarkably diminished or wholly extinct the past summer. I regard a portion of the information given in this address, particularly that relating to the wheat midge, as of such a character that it merits to be widely disseminated among our farmers before the opening of the coming season. I therefore communicate it, with some alterations and additions, for insertion in the COUNTRY GENTLEMAN.

It is now about thirty years since the wheat midge first invaded our State. During all that period it has been one of the most formidable enemies with which our agriculturists have had to contend—greatly injuring, and in some instances totally destroying their fields of wheat. Though its depredations have been much greater some years than others, almost every year it has been so numerous as to materially diminish the productiveness of this crop.

The habits and transformations of this insect I will briefly state, as some of our readers may not be familiar therewith. The larvæ, or little yellow worms, which occur in the ears of wheat are so universally known that it is unnecessary to describe them. These worms get their growth about the time the wheat ripens; and when a cloudy, damp day occurs, and the straw is wet with rain, whereby they can adhere to it, they come out of the wheat heads and crawl down the straw to the ground. Some make this descent before the grain is cut, others when it is standing in stooks in the field, and others which are belated in their growth are carried with the grain into the barn. On reaching the ground they crawl slightly into it, or under any decaying leaves or straws which they find on its surface, and there remain at rest during the autumn, winter and spring. The warmth of this last named season changes it to a pupa, in which state the worm appears as though it had a kind of vest or hood drawn over the head end of its body, with some little cords hanging down in front.

From this pupa the perfect insect or midge comes out

in June. This resembles a minute fly or mosquito. The reader will form a very good idea of its size, color and appearance by imagining one of the little bright yellow worms which he has seen in the wheat heads, with long and very slender legs and a pair of small wings attached to it. There are two species of these flies found together in our wheatfields. One (*Cecidomyia Tritici*, Kirby) has the wings perfectly clear and glossy. The other (which I have named *Cecidomyia cerealis*), which is more rare, has seven dusky spots on each of its wings. But as we know of no dissimilarity in their habits, this distinction is unnecessary, except where scientific accuracy is required.

Most of these flies are hatched, each summer, in fields where wheat was grown the year before. They remain at rest during the daytime, and become active in the evening. Immediately after they are hatched they are flying about everywhere in search of the fields in which the new crop of wheat is growing. In these fields they all gather themselves in the course of a few evenings, and there remain. They repose during the daytime, standing upon the wheat stalks down near the ground. After sunset they take wing and hover in swarms around the heads of the wheat. The females will now be seen dancing up and down these heads, intently occupied in selecting a place thereon which is suited to their wants. Such a spot being discovered she alights upon it and pierces through the chaff with her sting or ovipositor. This is a hollow tube like a very fine hair, which she protrudes from her body. Through this she passes her eggs, one after another, into the chaff, placing them in contact with the germ or young kernel of grain. When this act is completed the labor of her life is finished, and she soon dies. Sometimes she is so exhausted by this work that she is unable to withdraw her sting from the chaff, and perishes, hanging thus chained thereto.

Long ago I found that these flies began to appear in the wheatfields on the 15th of June, and that they became excessively numerous there, in the course of a day or two afterwards. Yet I knew not but that they might have been hatched one or two weeks before that time, occupying the first period of their maturity in selecting and pairing with their mates, and only resorting to the wheat when they were ready to deposit their eggs and die. How to ascertain when this insect is first disclosed from its pupa, and how long it is occupied in migrating from the old to the new wheatfields is a problem which has been often in my thoughts, without being able to devise any convenient mode for its solution. Last season, however, it occurred to me that as these flies are attracted into our dwellings by the lights therein, it might hereby be found when they first begin to appear abroad and how long they continue. Accordingly, employing my evenings in reading beside an open window, it was on the 13th of June that one of these flies was first seen to alight on the paper before me. Upon the two following evenings quite a number of them were noticed, after which they were seen no more. It hence appears that two or three evenings suffice them for finding their way from the old into the new wheat fields.

It may here be remarked that among the hosts of midges, flies, and other small insects, which enter our windows upon warm sultry evenings, and are so great an annoyance around our lamps, the wheat midge is readily recognized by the bright yellow color of its body. None of our other minute flies which occur in the same situation are of a similar color.

The wheat midge, it is probable, varies somewhat in the time of its appearance, as the season is more backward or forward in different years, for the same atmospheric influences which hasten or delay the advance of vegetation operate similarly and to an equal degree upon the insect tribes, causing each species to come forth at the exact period when its food has grown to be in readiness for its use. And to the south of us, in Pennsylvania, the midge no doubt makes its appearance some days earlier than it does in this vicinity. Hence it is desirable that we have some other indication besides the mere date of a particular locality, by which we may be aware of the time when this insect comes abroad to commence its annual

career. And it may therefore be observed that when the first solitary fire-flies are seen sparkling in the evening air, and when the white flowers upon our locust trees are beginning to fade, so that some of them are dropped to the ground beneath the trees, we may be aware that the wheat midge is then newly hatched and is beginning to gather in the wheat fields.

Note.—I perceive that to complete this subject will extend the present article to a length inconvenient for insertion, and I therefore defer my observations upon the disappearance of this insect to another number.

Salem, N. Y., March 11, 1861.

ASA FITCH.

[For the Country Gentleman and Cultivator.]

Homeopathic Treatment in Diseases of Animals.

MESSRS. EDITORS—I always read with a great deal of interest, inquiries and advice in your paper, in relation to the treatment of diseases of domestic animals, particularly that most noble of them all, the horse.

For many years I have used the Homeopathic treatment in my farm-yard, and have found it equally efficacious there as in the human subject, or even more so, owing to the more simple food and habits of life.

A correspondent in a late no. of the COUNTRY GENTLEMAN, inquires for the best treatment of distemper in horses. The usual symptoms of this disease are fever, catarrh more or less severe, cough, swelling of the glands, loss of appetite, constipation, emaciation, &c. For these symptoms I use the following remedies: Aconite for the accelerated pulse and staring coat; Belladonna for the swelling of the glands; Nux. for the constipated condition—these two latter remedies will also act upon the cough, given alternately. These are all powerful poisons, and must only be used in the Homeopathic preparations. They can be obtained of any Homeo-practitioner, who will direct as to the quantity and frequency of administration, or a "Veterinary Manual," with suitable medicines, can be obtained of William Radde, 300 Broadway, N. Y., or Boericke's, Chestnut-st., above 5th, Philadelphia.

F. A. Gunther's is a valuable work on the treatment of horses, cattle, swine, sheep, and dogs; but Dr. Hemple's translation from the German of C. Schaeffer, is later and very good authority. Respectfully, your friend and a friend of the brute creation. SENEX. Mansfield, Pa.

P. S.—The horse should be kept warm and blanketed, in winter season during the distemper, and for a diet, bran mash, which is of a relaxing nature, and what good hay he will eat—a few carrots daily will be useful—oats and corn are too stimulating; moderate exercise daily, when weather is favorable, i. e., dry and not very cold.

Bad Milk and Butter in Winter.

It is said that when cows are allowed to eat the litter which is thrown out of horse stables, impregnated as it is with liquid manure, their milk and butter will be tainted with the taste, in the same way that the flavor is injured by eating turnips, but to a more disagreeable degree. If litter is allowed to be eaten, it should be only given to other cattle, and not to milch cows, which should have nothing but the sweetest and purest food.

Milk Fever in Cows after Calving.

MESSRS. EDITORS—This disease is caused by drinking cold water after calving, and being in the hot sun. A few days before calving, put them in the shade, where they can have good fresh air. After they come in give them warm drinks for about three days, with a little scalded bran to keep the bowels loose. When you commence giving cold water, give about half a pailful at a time, and increase gradually until you get the cow up to a full drink. Cows that are allowed to be in the sun and drink what cold water they want after calving, will be very sure to die with the milk fever. I have no objection to milking cows before they come in, if their bags get very full and hard.

Chittenango, N. Y.

H. C.

Heaths---the *Erica ignescens major*.

The accompanying engraving shows the flowers and foliage, in their natural size, of one of the numerous varieties of the Heaths, originally from the Cape of Good-Hope. This species flowers, says the *Revue Horticole*, in speaking of its culture in France, "in the greenhouse in January and February, and in the open air, from March to June," but the particular variety which is here represented, the *Erica ignescens major* of the gardeners, "is distinguished by larger growth, by leaves somewhat longer and smoother, and by yellowish flowers, appearing from August to November. The size of the leaves, the length of the Corolla, its acute divisions, its color of fiery red at the base and pale at the top, render it easily distinguishable from the *Erica curriflora*, which is its near neighbor." The *Ericas* may be propagated from the seed, or better from cuttings. Their care requires considerable skill, although Mrs. Loudon states that they "are much more easily grown than is generally supposed." The great difficulty appears to be in rightly regulating the amount of moisture supplied to them; in pots, the drainage must be particularly attended to, but "great care must be taken that the roots never get dried up." They require considerable air—"to feel the wind between every leaf." They are also frequently "potted much too low, and thus the collar of the plant is rotted."

REMOVING LARGE TREES.

For common practice, and with good cultivation, it is now fully established that small trees, well removed, will become larger and better with a few years growth, than when transplanted of large size. In transplanting from nurseries, small trees are therefore selected by skillful cultivators. There are cases, however, where the removal of large trees becomes desirable—such for example as thinning out plantations, or transferring trees from one part of the same grounds to another. To do it imperfectly, or by mutilating the trees in a hasty manner, would be no better than throwing them at once away; a large mass

of the roots must be carefully secured, and this cannot be done without conveying with them a large ball of earth. Nor should the operation in any instance be performed on such as are more than three or four inches in diameter, and twenty or twenty-five feet high. The operation succeeds better with evergreens than with most deciduous trees, on account of the more circumscribed and denser mass of fibrous roots. It is commonly performed in winter, with a frozen ball of earth; but if done in spring it is equally successful, and the labor is not one-half that of cutting frozen earth.

One of the simplest and easiest modes of removing the trees that we have met with, is that practiced by W. P. HOWLAND, Esq., of Aurora, N. Y., who has carried evergreens twenty feet high or more, with half a ton of earth on the roots, with the labor of two men and a single horse. A large number of trees were thus removed, and so successful was the work, that, supplied as they were with mellow and rich earth outside the balls, they actually grew more the following summer, than they had for any single year previously.



Fig. 1.

The trees are first dug about and are completely loosened. A piece of carpet or thick sacking is then wound about the trunk for a foot or two, to prevent any accidental chafing. An iron ring, shaped as in fig. 3, and five or



Fig. 2.

six inches long, is then fastened to the trunk close to the ground, by passing through it and around the trunk, a broad



Fig. 3.

strip of stout sacking—strong enough to hold the weight of the tree, fig. 4. The hinder wheels of a common farm wagon, with their axle, are then run up near the tree, behind it. Chains attached to the axle, as



Fig. 4.

shown in fig. 1, enable the horse to draw it, when hitched to the whistle-tree, *a*. The long lever *b*, is then placed upon the axle, which serves as a fulcrum, and the hook at its end, (shown in fig. 2,) is hooked into the ring already mentioned. By bringing down the end *b* of this lever, (fig. 1,) the tree is hoisted out of its hole, as shown in the figure. One man holding the lever *b*, and the other driving the horse, it is carried and deposited at the exact spot desired; it is lowered into the new hole with the same ease that it was raised from its former position. After the digging has been performed, the whole operation is completed in a few minutes, and there is no hard lifting, grunting, nor severe strain of the vertebral column, but all is done with ease, satisfaction, and precision.

Where other trees stand thickly and in the way, the pole may be first set upright against the side of the tree, and both tied together a few feet from the ground; then by bringing both down horizontally, the tree is drawn off without interfering with others. A rope attached to the end of the pole will enable the operator to lower it easily.

A CHENANGO COUNTY BARN.

L. H. TUCKER, Esq.—Enclosed I send you a plan of my barn, as requested. Its size is 50 by 70 feet, with a porch 16 by 17 feet, and cupola 7 by 10 feet, and 8½ feet high. The main posts are 24 feet, giving it something of an elevation, and a considerable room. Had I used 18 instead of 24 feet posts, the barn would have presented quite a different appearance, and no one would have thought me *wild* in my calculations; yet \$25 will cover the difference in the expense, and it gives me 21,000 additional square feet, all accessible and convenient for storage and straw, stalks, &c., and saving the necessity of stacking out, to be destroyed and scattered by wind and storm.

The frame is of pine and second growth hemlock; the covering, floors and partitions also pine. It is ceiled on the outside with inch boards, planed and matched, and rabbited 2 inches wide to the tongue, the boards running vertically. The cornice is what carpenters call a "bracketed cornice."

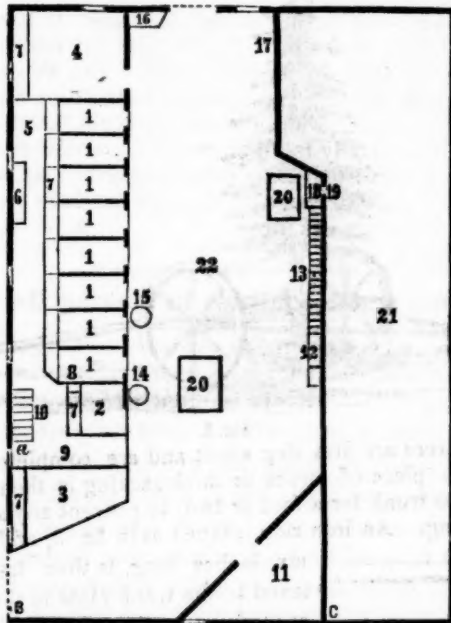


FIG. 1.—GROUND PLAN OF BASEMENT—36 by 70 feet, 8 foot walls. . .
1. Stalls for cattle, 4 feet wide, with gates opening into yard, (22.) . . .
2. Calf stall, 6½ feet square. . . 3 and 4. Loose boxes. . . 5. Walk, 4 feet wide. . . 6. Point where the feed falls from 2d and 3d floors. . . 7, 7, 7. Mangers, 18 inches wide, 14 inches deep. . . 8. Conductor from the provender bin. . . 9. Passage into the yard (22.) . . . 10. Stairs from 2d floor, lighting at a. . . 11. Root cellar. . . 12. Water trough. . . 13. Stairs for poultry to henry. . . 14. Urinaryum. . . 15. Discharge pipe from the gutter behind horse stalls above. . . 16. Salt box. . . 17. Droppings from privy. . . 18. Platform at the entrance to henry, 19, seven feet from floor. . . 20, 20. Points where the horse manure is thrown into the basement from the floor above. . . 21. Unexcavated earth forming the floors to the loose boxes and hospital above. . . 22. Yard into which the cattle are turned during the day.

The yard in the basement has a clay floor, but I design to make a concrete bottom. The stalls are four feet wide, and boarded on both sides of 3 by 3 inch scantling, five feet high, between the stalls, and each animal is fastened in by a gate behind it. The walk in front of the cattle is 4 feet wide, and 17 inches higher than the bottom of the mangers, of which it forms the back. The feed is swept from the walk directly into the mangers, and each animal gets its allowance, no more, no less. There are two "loose boxes" for cows when required. The floors are double boards, joints broke, and 3 inches inclination. The basement is enclosed on the north, east, and part of the west sides, with a concrete wall, the remainder ceiled, lighted by seven glazed windows, 3 feet square, on south side and two on the west, and ventilated with pipes 1 foot square leading to the ridge. It may not be uninteresting to state that the thermometer—one of Kendall's best—has generally stood at about 40 deg. in the basement during the winter, and but two mornings below 30 deg. The coldest this winter, while the mercury indicated 16 deg. below at my house, it stood 24 deg. above in the base-

ment. Notwithstanding this high temperature and the accumulation of manure about two feet deep, the ventilation is so perfect that my barn is entirely free from all noxious exhalations, both from the animals and manurial deposits, and I have not had an animal refuse a single feed this winter.

I am often asked, "do not your cattle injure each other while in the yard?" My stock consists of two pairs of working oxen, cows, yearlings and a calf, and all are let out of their stalls into the yard together, and I have not seen even a scratch on either of them this winter. And I suppose my stock are quite as much inclined to use their horns as others, and when first brought into the yard last fall, I watched them with considerable anxiety, fearing that huddled together as they were, "thick as frogs in Egypt," they might injure each other, and the result was "an amicable compromise." We all know the effects of a full stomach and comfortable quarters on man, and it is possible that a plenty to eat and protection from the cold and the storm, will quite as effectually quiet the equally stubborn and vicious natures of the brute. Had it not been for my desire to furnish earth floors for my horses, I might have added 14 by 70 feet to my yard, without increasing the expense. But having once enjoyed similar boxes, and thinking quite as much of my "Morgans," as it is customary for a man to think of his horses, I felt unwilling to deprive them of the luxury now. It may be asked why I have not used the "open stalls" described in No. 7 of the Co. GENT., which are so *fashionable* in this neighborhood. Economy of room was a great inducement for me to adopt them, and I watched the operation of them in other barns with that design, and became convinced that I should not be satisfied with them.

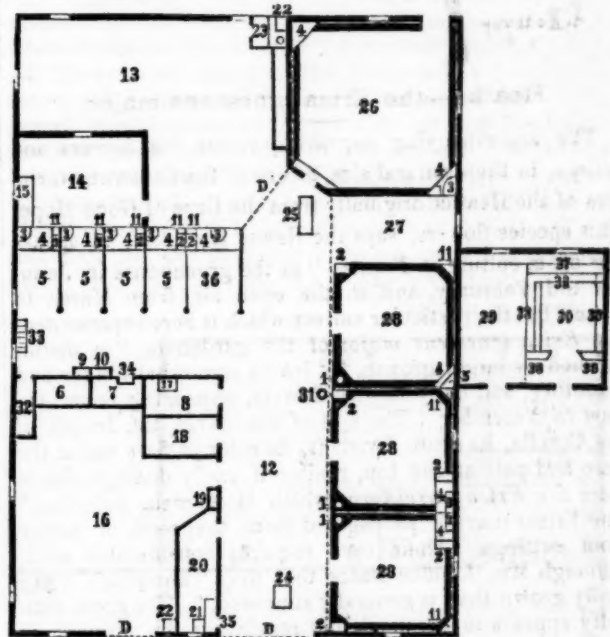


FIG. 2.—HORSE BARN OR FIRST FLOOR—50 by 70 feet, 9 feet between joints.

Figs. 1. Water boxes. . . 2. Feed mangers. . . 3. Spouts for hay, with slats 2 feet at bottom. . . 4. Mangers. . . 5. Horse stalls, 5 feet wide. . . 6. Provender bin. . . 7. Oat bin. . . 8. Sawdust bin. . . 9. Opening into provender bin; 10, into oat bin. . . 11. Salt boxes in each stall. . . 12. Floor, 12 feet wide. . . 13. Tool room, 26 by 30 feet. . . 14. Chaff room, 9 by 15 feet. . . 15. Spout, 6 by 1½ feet, leading from floor above to basement, through which feed is thrown, with a door opening into it from chaff room. . . 16. Carriage room 24 by 28 feet, outside measurement. . . 17 and 25. Doors to throw manure into basement. . . 18 and 20. Harness rooms. . . 19. Tool closet opening into 16 and 12. . . 21. Ventilator from root cellar, entering into the main ventilator. . . 22. Main ventilators passing from basement to ridge. . . 23. Privy. . . 24. Trap door into root cellar. . . 26. Hospital, 20 by 20 feet, with earth floor. . . 27. Henry, 7 by 14 feet, with earth floor. . . 28, 28, 28. Loose boxes, 14 by 14 feet, with earth floor. . . 29. Garden tool room. . . 30. Ice house. . . 31. Pump. . . 32. Enclosed stairway into basement, with ventilator at top. . . 33. Stairs to threshing floor. . . 34. Water closet. . . 35. Dog kennel. . . 36. Stall, 6 feet 6 inches wide, with two feed mangers to be used if required to drive a pair of horses in to feed. . . 37. Open space between the ice house proper and siding, 1 foot wide. . . 38. Space surrounding the ice, 1 foot thick, filled in with sawdust. . . 39. Stone abutment terminating the embankment of earth forming the driveway upon the threshing floor, 11 feet above the surface. . . D D. D. Doors. . . The windows shown in the engraving are all glazed on this floor and in the basement.

This brings us to the first floor or horse barn. The partitions here are of pine, and *matched*, with the excep-

tion of the stalls and boxes. The stalls are double boarded 4 feet high, back to the heel post, and to the ceiling above as far back as the mangers. From the mangers to the heel post above the boarding I have pickets of oak, 2 inches square, running to the ceiling, 4 inches apart. Behind the horses there are ropes furnished with snaps passing from one heel post to the other, to prevent the horse from pulling at the halter, or, if loose, from getting out of his stall and injuring other horses and "raising a muss generally." The loose boxes are boarded up 3 feet high, at which point oak plank resting on brackets projects into the box 10 inches, to prevent the horse from rubbing his tail. From this to the floor above I have used oak pickets 2 inches square, and 4 inches apart. The object of using pickets in place of ceiling are, first, air and light, and second, to give the horses the opportunity of seeing and playing with each other. They are sufficiently near enough together, and strong to prevent them from injuring each other, unless vicious. Across the door, and resting on the rub plank, is a leaf or fall of the same width of the plank. Provision is made for feeding both hay and grain and supplying water from the outside without entering.

The poultry room is ceiled on the sides, has pickets in front, and is provided with nests, perches and suitable ladders leading to the perches. The poultry are admitted to the basement by a door, and to the premises, when desired, by a wicket.

The room for a hospital is ceiled to the floor above and furnished with both a wicket and a tight door, and rub planks. This room is convenient to keep colts, or a breed-mare, when not wanted for a sick animal, and is supplied with two mangers. It is also convenient to take a horse when you wish to teach him the way the "world wags." The harness and tool rooms are provided with a suitable number of pins, brackets, shelves, &c. The floors beneath the stalls are grooved and tongued, with a gutter to carry off the urine. But by the use of sawdust for bedding, the gutter is rendered useless. Not a gill has passed into it during the winter. Underneath the threshing floor, and immediately over the stalls, it is ceiled, boards matched, and the space between the floor and ceiling—10 inches—filled in with sawdust to deaden the sound. It will also be observed that I have provided water closets on both this floor and the floor above. Visitors will therefore please "commit no nuisance."

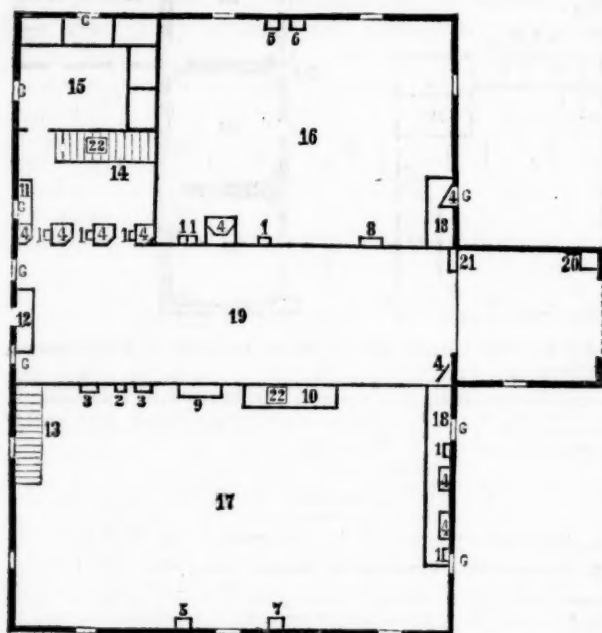


FIG. 3.—MAIN FLOOR—50 by 70 feet—Porch 16 by 17.

Figures—1. Mouths of conductors for feeding grain to horses below. 2. Water closet, with conductor to urinalium in basement. 3.3 Doors to fill out and provender bins in story below. 4. Spouts for hay leading to mangers below, 2 inches larger at bottom than top. 5. Ventilators from basement passing out at the ridge. 6 and 7. Ventilators from story below, entering the main ventilators. 8. Door into henery below. 9. Doors beneath girder, for filling saw-dust bin. 10. Plaster bin, 3 by 10 feet, with scuttle at the bottom through which the contents are discharged into a wagon on floor below, when wanted for use. 11. Spout 18 inches by 6 feet, to pass feed into the basement, enclosed four feet above the floor, with ventilator at the top.

....12. Stairway from below....13. Stairs leading to loft....14. Stairs to cupola....15. Granary, 13 by 16....16. Bay, 26 by 34....17. Bay, 28 by 50....18. 18. Passages for feeding horse boxes and hospital....19. Threshing floor, 16 by 50....20. Ventilator from ice-house....21. Windlass to hoist hay rising to the ridge of porch when not in use....22. Trap-door beneath the stairs, through which the hay and straw falls from the cutter into the chaff-room below. The windows on this floor which are marked G, are glazed—all the rest have blinds only.

The threshing floor is grooved and tongued. The embankment for driving upon this floor is of earth excavated from the basement. Grade 1 foot to 12. The floors beneath the bays are of pine boards lined with five-eighths inch pine, joints broke, and nailed with 12d nails into each joice. Each stall and box can be fed with both hay and grain from this floor.

For the manner in which my plans have been carried out, and the neatness of execution, I am indebted to my builder, R. W. Akerley, Esq., of this place, who has done nearly all the work, and I feel confident that it is done in a substantial manner.

The barn contains a trifle over 100,000 feet of lumber, and cost, including painting, \$2,192.28. If built of rough boards, and put up in the kind of tumble-together manner in which barns are generally built, regardless alike of style or order, Mr. Akerley thinks it can be completed for \$1,200, including basement.

Your visit and lecture at our place seem to be producing good fruit, and will be held in grateful remembrance by our little Club for years to come. And we shall look forward with pleasing anticipations to the time when you fulfill your partial promise to visit us again, and be assured I shall cheerfully fulfill on my part, and devote a week, or more if consistent with other engagements, with my team, to "showing you up" through the dairy regions of this and Delaware counties.

A. J. SANDS.

Bainbridge, N. Y.

Errors and Requisites in Making Butter.

[We have been obliged to condense somewhat the following valuable communication from Mr. SHATTUCK. Eds.]

EDITORS CO. GENT.—It is often remarked that good dairies cannot be made without good dairymen, and I take the liberty to assert that it cannot be done by the best dairymen in the world, unless provided with the necessary conveniences. I would like to see the dairywoman having skill enough to make first quality of butter from milk drawn from cows whose temperature has been raised to fever heat by fright and running, yet dairymen sometimes expect this; and will buy the poorest cows, give them about half enough to eat, furnish a very poor milk-room, other fixtures in proportion, and then find fault with their good wives, for not making better butter and more of it.

On the other hand, there is one fault peculiar to the dairymen of the country, originating in the fact that each thinks she makes the *very best butter* that is made any where. Consequently the husbands are censured for not getting as much by two or three cents a pound, as some other man does. If I can ever be forgiven by dear women for saying this, (and I know their charity is boundless,) I will tell them how to remedy this bone of contention. Never allow a butter buyer an opportunity to find fault with your butter, but tell him before he sees it, "that if it is faulty you would be pleased to have him tell you the whys and wherefores, and you will in future apply the remedy." My word for it, you will make it pay in the end, to do so.

As to the cows I make it a point to get those with a good yellow skin, the quality of the milk being very essential in the making of good butter, that of a fine yellow color always having the preference, and such butter cannot be made from cows with pale colorless skin.

The next point is, food for the cow, which should be of the best quality, and plenty of it. The pasture should be where there is abundance of good sweet feed, with a plentiful supply of water. The quality of feed has much to do with the quality of butter.

The milking should be done with neatness, the milk

room should be in a good cool place, properly ventilated, and every thing about it kept clean and sweet. I prefer to have the milk room above ground, as I think the cream rises better in most kinds of weather, than it does in cellars. We use tin pans placed upon racks for setting the milk, letting it stand a sufficient time for the cream to rise, which is generally in warm weather about thirty-six hours, but I think that it requires great care and good judgment on the part of the dairywomen, to see that the milk does not stand too long before it is skimmed, as for instance, in very muggy hot weather. Before thunderstorms the milk will sour very soon, and if it is not attended to at the proper time, you will be very likely to have a poor churning of butter, which injures the sale of a dairy very much. Hence the state of the weather and other circumstances must govern you in regard to the time you allow the milk to stand before it is skimmed. The cream taken off at night should be set in a cool place in the cellar, and churned in the morning.

Now for the churning process, which requires judgment and skill in regard to temperature of cream. My experience is, that in warm weather it should be about fifty-five degrees fahrenheit, but the general opinion is from sixty to sixty-five degrees; that I think too warm, though much depends upon the place and state of the atmosphere where you are churning. The cream naturally grows warmer by churning, especially if the air that is thrown into the churn is warmer than the cream, and the reverse—if the atmosphere is colder than the cream, it would grow cold. You should be ruled by circumstances in this matter also. When the butter comes, it should be taken from the churn and the buttermilk worked out. We prefer to wash with cold water, thinking that we can remove the buttermilk with less working than without the water. Then it should be salted with good pure salt, about one ounce of salt to a pound of butter, thoroughly worked in, then covered to exclude the air, and set in a cool place for twelve or twenty-four hours; when it should be worked again sufficiently to free it from buttermilk. The moment that is done it should be packed in the firkin and covered tightly to keep it from the air, and when the firkin is filled it should be covered with a cloth and a strong brine made of salt put on the butter, and kept so until it goes to market.

I repeat the assertion that it requires good judgment and skill to manufacture a fine article of butter, but the cost is no more than an ordinary article, and not as much as a very poor article. Butter will absorb impurities quicker probably than any other article; hence it should be kept away from all impure or strong scented substances if you would keep it from getting tainted with bad odors.

One error in butter-making is over-working, which leaves it salvy, and destroys the grain, lessening the price very much. Another is not working enough to remove the buttermilk, which renders it unsaleable. Another is not salting enough, while others salt too high; another is a cheesy substance we sometimes find in cream and butter, which makes it very unpalatable and injures the sale. All these defects should be avoided, and I think can be with proper attention.

One great beauty of a dairy is to have it as nearly alike as possible, uniformly of the best, through the season, which can only be done by the greatest care and attention. Ice is very necessary in most localities, especially in the warmest part of the season. Some very fine dairies frequently have what is called "warm weather butter," which injures the sale of the whole very much. What I mean by this is, that in the hottest weather, unless you have ice, or very cold water, the butter will come soft, and it is very difficult to make a fine article.

Without wishing to detract from the credit of Chenango County butter, I think a large quantity of it might be improved from two to five cents a pound, which would well repay extra labor. I desire to advise young women who think of working in a dairy, to learn to make a fine article if they have not already done so, and if they cannot learn effectually without, it would pay them well to go in some place where they know how, and give one summer's

work to learn, in increased wages afterward, and eventually in winning golden opinions for their husbands.

I will guarantee any one's success who follows the rules laid down, always to attend to every branch of the dairy, just when it requires attention, and to watch the markets closely, making it always a point to sell when buyers are anxious to purchase. If I have failed to give you a satisfactory answer, as to my good luck in the dairy business, I hope some one more competent will take up the subject and do it better justice.

JOHN SHATTUCK.

Chenango Co., N. Y.

[For the Country Gentleman and Cultivator.]

"CHESTER COUNTY BUTTER."

The best butter in this country is admitted by connoisseurs to be made in the dairies of Chester and Delaware counties in Pennsylvania, from meadows a hundred years in grass, and which the owners never think of plowing up. The sod is said to be a foot thick, and consequently little affected by drouth. This butter is appropriated by the markets of Philadelphia, Baltimore and Washington, and a person once accustomed to its aroma and flavor, becomes fastidious for life in that article.

The dairy-people work their butter with a damp cloth, upon a marble or hardwood slab, (instead of a bowl and ladle,)—rinsing and wringing the cloth in cold water as often as it becomes saturated with the milk. The butter will not become waxy or salvy by this process, as it is made perfectly dry, with half the manipulation. A single trial will convince of this. Of course the butter must be salted and cooled, and time allowed for the salt to be entirely dissolved, before it is worked for packing, or for the table. The cloth must be close in texture, and not at all linty—a lump of ice will prevent the butter becoming oily in very warm weather. An ounce and a half will be found about the right quantity of salt for a pound of butter by this process, as the cloth extracts more salt than the ladle.

Mansfield, Pa.

S. E. M.

[For the Cultivator and Country Gentleman.]

Best Mode of Raising Early Tomatoes, &c.

Start the seeds in a box of moist earth, and when the plants are about two inches high, transplant them into a turnip, scooped out and filled with fine, rich mould. Set them out in your hot-bed, and when the spring frosts are past, remove them to the garden. This is better than making a basket for the roots, as sometimes recommended, as the turnip decays and nourishes the plant. Tomatoes are benefitted by an early transplanting, which causes them to throw out more roots and grow "stocky." Do not pinch out the centre shoot, unless you wish a succession of lateral suckers all the season. If you start the seeds in a hot-bed, the plants should still be moved, if only an inch or two, in the bed.

Of cucumbers, melons, Lima beans, and other tender plants that suffer from transplanting, the seeds may be planted in the turnip, and then treated as recommended in COUNTRY GENTLEMAN, (March 7, p. 159.) Sink the turnips in the soil or they will dry up, or you can keep them in the house in a shallow box, surrounded with earth or damp moss. M. Mansfield, Pa.

Poultry Cheaper than Pork.

A lady correspondent of the Homestead, has kept an accurate account with her hens for several years, and comes to the conclusion above stated. One year she kept hens "worth \$39.96, at a cost for food of \$39.81—total \$79.77. These hens produced in eggs \$34.92; in manure \$5; in stock at close of the year, \$50; total \$89.92, leaving a profit of \$10.15." Over and above this profit, she adds—"I used in the family during the year, ninety-one chickens and fowls, weighing about 300 pounds." "Another year, keeping more fowls and eating less, she made a still larger profit, while her pork raising cost over 5 cents per pound." No doubt that poultry properly managed, pay a larger profit than almost any other domestic animal.



THE ENGLISH GAME FOWL.

No satisfactory information seems to be accessible now, by which to pronounce with certainty on the origin of this breed. It is certain, however, that in India an original race of fowls (*Bankiva*) exist at the present day, bearing all the peculiar characteristics of the species, in full perfection; and the probability therefore is, that these fowls are natives of India. The natives of India, it is well known, are infected with a passion for cock-fighting. For this barbarous purpose these fowls are carefully bred, and the finest birds become articles of great value.

But whatever may have been the way in which the game fowl was carried into England, it has long been there cultivated with such care, and has attained such perfection, that it has been by some naturalists expressly denominated "The English Game Fowl."

The flesh of the game fowl is white, juicy, and superior in richness and flavor to all others; their eggs are small, fine shaped and delicate, with dark or yellowish shells. But these are not the fowls for the farm; they are extremely quarrelsome—even the chicks will fight till they are stone blind, before they are fairly feathered.

As sitters, Game hens have no superiors. Quiet on their eggs, regular in the hours for coming off and returning to their charge, and confident, from fearless disposition, of repelling the incursions of any intruder, they rarely fail to bring off good broods. Hatching accomplished, their merits appear in a still more conspicuous light. Ever on their guard, not even the shadow of a bird overhead, or the approach of man or beast, but finds them ready to do battle for their offspring; and instances are on record where rats and other vermin have thus fallen before them. C. N. BEMENT.

[For the Country Gentleman and Cultivator.]

Management of Cows after Calving.

MESSRS. EDITORS—I suppose that opinions differ, as to the management of cows, immediately after dropping their calves, as well as in many other things. Some give them little or nothing to eat, for twenty-four hours after calving, while others adopt a different course. The fasting theory is, that nourishing food induces caked bag and milk fever. Now I think this depends very much upon the previous keeping. If cows have been kept poorly until calving time, or nearly to that period, a sudden change from poor to very nourishing food might be injurious. But when they have been well kept through the winter, and their feed increased or made a little better for a week or ten days before calving, I think little or no danger need be apprehended from treating them generously, immediately after calving, or that no change need be made either in quality or quantity of food. Cold water, in my opinion, is worse for them than nourishing food.

I never have had any trouble with my cows' bags—never had a case of milk fever or caked bag—any thing more than the ordinary thickening up at the calving time—and my treatment is this:—Keep well through the winter—

make the feed better, by degrees, a few days before the cows come in, and within an hour after dropping the calf, give a pailful of warm drink, made by scalding three quarts of bran, (not meal,) and filling the pail with cold water, so that it shall be lukewarm. This drink, or clear water with the chill taken off, as the cow may require, is given for two days—no cold water being allowed. I make no other change in their diet. They are fed hay, meal and roots, regularly as usual. I am always very careful to keep them from cold winds or storms for three or four days, watering them in the stable, if the weather is bad. I also invariably anoint the bag at the first milking, with an ointment made of the bitter-sweet and lard or fresh butter simmered together—this is softening and beneficial, if there should be any inflammation. I feed salt and soot once a week at all seasons. There is more danger from sudden changes in feeding, than from almost any other cause. Starvation and repletion, by jerks, don't agree with the animal system. Care should always be taken to avoid taking cold. Cows that do not come in until after being turned to pasture, should have a portion of their milk drawn daily, if their bags become very full and hard. J. L. R. Jefferson Co., N. Y.

[For the Cultivator and Country Gentleman]

SOWING CORN IN DRILLS.

I wish to add my testimony in favor of the above mode, in preference to broadcasting. We tried both in 1860, on the same kind of land, side by side. For some weeks there was little apparent difference. It all looked small and spindling, as sowed corn often does, until when about six or eight inches high, we ran a light corn plow between the rows, throwing the earth towards them on each side. The effect was directly visible. The drilled corn shot ahead, and never ceased growing and thriving until in August we were constrained to cut the chief part of it up to prevent its going to seed, as it had tasseled out splendidly, and was setting little ears in profusion.

We had trouble in curing it, it was so full of juices, and the rain came on just as we had cut it. Query, what is the best way of curing corn-fodder?

By cutting rather high for green fodder, we had a second growth from the part cut first. The part sowed broadcast looked and yielded as usual. We thought the drilled part yielded double in amount from the same area.

The drills were run out with a light plow three feet apart, then sowed by hand about fifty grains to a foot. Mansfield, Pa. M.

[For the Country Gentleman and Cultivator.]

Varieties of Spring Wheat—Time to Sow.

MESSRS. EDs.—In the Co. GENT. of March 21, your correspondent, JOHN R. PRINCE, makes inquiry in regard to the best time to sow spring wheat to escape the midge, and adds his experience with the same. In answer, I would say that to escape the depredations of the wheat midge, more depends upon the variety of wheat sown, than upon the time of sowing. The Canada Club is an early variety, and cannot be safely sown in midge infected regions. I have known several attempts at growing this variety of spring wheat hereabouts, where it was so destroyed by the midge as not to be worth harvesting, and was left uncut. The Fife wheat is a later variety, and generally escapes the midge, but is often considerably shrunk from rust or other cause. The "China Tea," (spring wheat) is a late variety, and unless sown very early, will continue to grow so late, that before the formation of the grain, the midge will have had their "day," and gone for the season. It is generally sown from the middle of April to the 10th of May, but good crops have been grown here both earlier and later than that. It is a "rank grower," and for its many other good qualities has nearly superseded all other varieties, at least in this locality.

East Shelby, Orleans Co., N. Y.

I. L.

VARIETIES OF CLOVER.

In our recent article on the Clover Plant, (Co. GENT., March 21, 1861,) we gave some account of the more common different varieties in cultivation, but have since observed a more extended notice of the subject in the Boston Cultivator, which will further inform those interested.

"The only species of clover in general cultivation in this section, is the common red—*Trifolium pratense*. But of this there are two well-marked varieties, known as the northern and southern—the latter sometimes called western. It appears to be what some writers call the *Trifolium medium*. The northern is much the largest in growth, the stalks being sometimes three or four feet long, and as coarse as pea-vines. The southern grows scarcely to half the height, matures much earlier, makes more blossoms, and ripens more evenly than the northern. The second growth of the same season is usually more abundant than with the northern, often nearly equalling the first, and being generally preferred for seed. From the fineness of the stalk it makes better hay than the northern, and is more easily cured, while the quantity it will produce in the whole season is not much if any less."

In regard to the Italian clover, it will be seen that its estimate differs from our own. We have never grown it, but based our description of its characteristics on the experience of correspondents of the New-England Farmer, one of whom had grown it we think two or three seasons. Of "other kinds of clover that have been tried here," the Cultivator remarks:

Other kinds of clover have been tried here. The Italian or Crimson clover—*T. incarnatum*—was introduced several years ago, and the writer made some trials with it. For ordinary field culture it proved entirely too tender. It is quite pretty and interesting as a garden flower. The "Bokhara or tree clover," much vaunted several years ago, is a species of Melilot, akin to the common sweet clover. After a short run as a curiosity, its cultivation was universally abandoned. The Alfalfa clover, from Mexico, California, &c. is identical with lucerne—*Medicago sativa*. The Alyke clover, which appears to be the newest thing in this line, considerably resembles the common white—*T. ripens*—and may be a sport from that species. It also resembles an indigenous American species, called in the West "buffalo clover." We have seen it in England and Scotland, but several farmers in the latter country assured us that it was not sufficiently hardy. Its want of hardihood will probably prevent its coming into general use here. The common white grows spontaneously to such an extent here, that there is seldom occasion to sow it. The perennial clover—*T. perenne*—or "cow-grass" of England, we have never seen in this country. It grows in Britain in situations which are quite unfavorable to common clover; as on stiff clay, hard road-sides, and where only a slight depth of soil overlies rocks. The leaf and flower resemble common clover, but the stalk is of smaller size, and it appears to be better relished by cattle. It might be well to try this species on some of our pastures.

[For the Country Gentleman and Cultivator.]

How Superphosphate of Lime is Made.

EDS. CO. GENT.—During a visit to Boston last week, I had an opportunity of visiting Coe's establishment for the manufacture of Superphosphate of Lime, and knowing that many of your readers use it largely, I thought that a few notes in regard to it, might not be out of place at this season.

Mr. Coe introduced me to his working chemist, Mr. J. M. Gallacher, who is ingenious and enterprising, having just patented a process of collecting, condensing and using the ammoniacal and other gases which usually escape and poison the air for a long distance around a bone factory—thus not only preventing them from becoming an intolerable nuisance, but turning them to a good account in the preparation of the superphosphate; inflammable gases, which are not condensed, are burnt under the retorts. Mr. Coe spent several thousand dollars in advertising for old bones, before the collectors began to bring them in. They now receive them from all parts of the country, and use about one hundred tons per week. The bones are assort-

ed into hard and soft. The soft bones are ground, screened, and the finest parts barreled and sold as ground bones, or bone dust, to be used as top dressing. The coarser pieces are, with the *hard* bones, thrown into the retorts, of which there are fifteen, and exposed to an intense heat for five hours, then ground coarse and screened—the dust being used for the superphosphate, and the rest sold to the sugar refiners. This eventually comes back, is reburned and ground, and is then ready to take its place in the mixing house where we will go. Here we find large cisterns of fluid animal matter, distilled from the bones in the retorts in the other house, condensed and brought through several hundred feet of iron pipe. A certain proportion of this liquid, sulphuric acid, and the burned bone dust, are mixed in suitable tanks. The acid immediately attacks the alkali of the bones and fluid animal matter, causing a strong effervescence, which is promoted by frequent agitation, until the whole becomes a thick, pasty mass. It is then subjected to some further manipulations, dried, put in bags, marked, as is ready for market, where it meets with a ready sale, as it is most deservedly popular with every one who has tried it.

Mr. Gallacher informed me that they were about making some improvements in their retorts, which would enable them to run their establishment at its full power all the time. The condensation of the ammoniacal and other gases, formed by burning the bones in close retorts and returning them again to the bone dust, with the sulphuric acid, appeared to me to be an improvement of the greatest consequence to all who use artificial manures. A certain percentage of ammonia is thus added to the superphosphate, which every one knows hastens the growth of the young plant, while the lime itself is in no way injured in the permanent effect claimed for it.

I used a large quantity of the superphosphate last year, having made quite a number of experiments with it, alone and in connection with other manures, and came to the conclusion that I could buy nothing better for any crop I raise. Having seen the whole process of manufacture, from the purchase of the bones to the perfect article, I feel a confidence in the purity and efficiency of it, which I did not before, and shall use it this year more liberally than last. THOS. E. HATCH. Keene, N. H.

[For the Country Gentleman and Cultivator.]

RHEUMATISM—BOILS.

The following was published in THE CULTIVATOR in 1835, and having proved its efficacy many times, I think it would be a favor to many of your readers to have it republished:

"Take 1 gill of alcohol and 1 gill of spirits of turpentine; mix them in a bottle, and add an ounce of camphor. Apply this compound by rubbing thoroughly with a piece of flannel the part affected three nights in succession, then omit three, and so on, till a cure is effected. It is a powerful medicine, and if it should affect the stomach, take a small quantity of brandy, ginger tea, or something of a like exciting nature."

This is for Rheumatism, and I know from experience that it is an excellent remedy. I have also used it for boils as follows:

When I discover a boil begin to break out, (as its peculiar appearance and the burning pain will indicate what it is,) I immediately apply a drop or two of the linament, and continue to do so occasionally until it disappears, which is generally in a day or two. I have used it many times, and have never had it fail. D. G. WILLIAMS. Vermont.

[For the Country Gentleman and Cultivator.]

How to Purify Rancid Lard.

MESSRS. EDITORS—Having derived both profit and pleasure from many of the recipes which enrich your columns, I imagine the following will do your readers no harm. We had some 40 lbs. rancid lard, which was valueless as it was. Knowing the antiseptic quality of the chloride of soda, I procured 3 ounces, which was poured into about a pailful of soft water, and when hot the lard added. After boiling it thoroughly together for an hour or two it was set aside to cool. The lard was taken off when nearly cold, and was subsequently boiled up. The color was restored to an alabaster white, and the lard was as sweet as a rose. O. C. C. Marshal, Mich.

[For the Cultivator and Country Gentleman.]

FEEDING HORSES.

As N. H. C. has taken the liberty of asking a reply to the following questions through the Co. GENT.—“Can a horse that is moderately used, be kept in good condition when fed on oats *alone*, at a less cost than on hay alone, and what quantities of each will a 900 pound horse require when fed exclusively on either kind, and what is the most economical way that such a horse can be fed, and kept in good working order,”—I take the liberty of replying to the best of my ability. In reply to the question, whether “a horse that is moderately used, can be kept in good condition on oats *alone*,” I answer, perhaps for a very short time, but soon he will be “oat-killed,” i. e. a gradual wasting away. Upon “hay alone,” his sojourn on earth will be prolonged, depending upon the capacity of his stomach, which before many days will become enlarged to an enormous size, and of course it will take time to fill this receptacle, thereby losing money, as the old adage tells us “time is money.” The reason that horses are sometimes killed by eating “oats alone,” is that the food is in too concentrated form, and the stomach *must* be expanded that the pressure upon it may (as it does) cause a flow of gastric juice, which is necessary to promote digestion; but when feeding “hay alone,” the horse is obliged to eat a large quantity which must be digested, or rather (to be correct) reduced to a pulpy mass so that *certain* parts can be taken by the lacteals to the blood vessels, and by these into the heart, and from these into the lungs and converted into blood. We readily see how much useless work the stomach performs in reducing (as it is obliged to,) a large portion of food which does not enter into the system as nourishment. The remainder of this passes out through the bowels as refuse. We here have the two extremes, and by uniting them form a happy medium, containing what is just right—the hay to cause the flow of gastric juice, &c., and the oats to furnish the *larger* share of food. In all food the constituents are generally the *same*, but in different proportions, and therefore a mixture is necessary to supply the blood with all these constituents, and in the right proportions for the formation of each and every part of the body; and it is the feeding day after day, and year after year, the same food to a horse, that gradually but surely weakens the system and causes a “hankering” for a change, and then very likely our wise stable-boy *knows* that the ill treated dumb brute has the “*bots*,” and then, as a matter of course, all of the most noxious drugs are poured down the poor animal’s throat with artistic skill, showing itself in every turn of the hand, telling to us “*that practice makes perfect*.” Another reason why horses need nearly the same constituents, and in the same proportions, even after they have attained their growth, is that the body is continually undergoing a change, and the muscles, bones, &c., are being renewed at all times, and the refuse from them passes off through the bowels. If horses were properly treated, there would not be any need of turning them out to pasture to recruit their broken down health; in fact, I am decidedly opposed to “*pasturing*,” although perfectly delighted to watch the merry twinkling of the eye, as he gets a bite of grass to nibble, without being tormented by the flies.

As to the gentleman’s question concerning the right proportion of food for his horse, it is rather difficult to reply satisfactorily, as horses, like men, differ in regard to the amount of food which will keep them in “good working order.” A pony built horse, no matter how large, will keep a better coat of flesh upon his ribs, than a small, slab-sided, open gaited horse, even upon less food. I prefer to regulate the amount of food so that it will keep the horse “*feeling well*,” as too much is not assimilated, but merely passes through the stomach and bowels, as the appearance of the manure of a horse fed nearly all oats and but little hay, testifies.

I have two horses, one 15 hands high, and will weigh

900 pounds or so, close ribbed, short body and legs, who will only “muss over” ten pounds of hay and eight quarts of good oats per day, and upon that feed will work hard, look well, feel well, and carry a good coat of flesh upon his ribs. The other is 15½ hands high, will weigh 1,100 pounds, big head and ears, long body and legs, and after eating his satisfactory 18 quarts of oats, and what hay he likes, (I dare not compute,) will neigh for *more* yet. Twelve quarts will suffice and enable him to work moderately and feel well; but as for carrying a coat of flesh upon his ribs, oats or hay in *any* quantity cannot do it.

Having answered the gentleman’s question as well as I can, I will give him the way I have done, and am now doing. For horses “moderately used,” oats and hay are preferable, in proportion (depending somewhat upon the horse, as stated above,) as 12 pounds of oats and what hay he will eat, (which will not be much, as grain decreases the appetite for hay,) per day, in three feeds, morning, noon and night, and about twice or three times a week, give once a day, and that at night, roots of some good kind; carrots are perhaps the best, but parsnips, turnips, apples and potatoes are good, but I would be careful of the two last, and prefer to give only a few at a time, as colic and they are great friends.

If roots cannot be had conveniently, I would give as a substitute a bran mash, which operates upon the bowels, keeping them in good order. It is made of wheat bran and boiling water—say six quarts of bran, and as much water as will dampen it; cover it and let it steam, and give it as warm as possible without burning the mouth of your horse, who will “dive” into it. A few roots would improve it. A change from oats would call for cut feed; that is, hay cut short, and meal made of corn, rye, or most any grain, ground fine, and enough water to cause the meal to cling to the hay. This feed, on account of the water, I prefer to give at night; it is also a heartier feed than oats, and of course preferable when the horse is working hard—although upon the grain used depends the nutriment. Look closely to the stable as regards the comfort of the horse, as it exercises a great influence upon him; and remember that cleanliness is secondary only to food.

Be regular in feeding, and if possible in work. Don’t tamper with drugs. ONE WHO HAS TRIED IT.

A GOOD COW

MESSRS. TUCKERS—According to promise, I give you the weight of my full-blooded Hereford cow. Live weight here, 1732 lbs. Live weight after being driven to Seneca Fall, and 12 hours off food and water, 1684 lbs.

Dead weight, beef.....	1104 pounds.
Tallow.....	217 do.
Hide.....	90 do.

1411 pounds.

You will see she was nearly 66 per cent. of beef to the live weight, and a mere trifle less than 84 per cent. of beef, hide and tallow, which is the greatest per centage I have heard of. She was only of small bone and frame, but the most weight for the same bulk I have seen. I sold her for \$12 per 100 lbs., New-York city weight—say sinking offal.

I have owned only three Herefords, but from what I have seen of them, I think they will make more fat for the feed than any cattle I have fed. I would like to get a pair of steers from two to three years old, and as large frames as that breed affords, and I would try what they would make on a given quantity of feed. I have a grade Hereford and Durham, not yet four years old, which weighs 2260 lbs., very handsome. He is not yet very fat, but intend him to be so next December. The cow was raised from the importation of the Hon. Erastus Corning, and W. H. Sotham, Esq. I think it is a loss to the State that the breed were not more appreciated by the farmers, as they are certainly an excellent breed for making beef. I sold her to Messrs. Smith & Co., very gentlemanly and enterprising butchers of Seneca Falls. JOHN JOHNSTON.
Near Geneva, March 23, 1861.

[For the Country Gentleman and Cultivator.]

HOW TO GET MORE LAND.

Many a farmer can become possessed of more land than he now has, by other means than buying it. Paradoxical as this proposition may sound, it is, nevertheless, to all intents strictly true. We repeat, that for all agricultural purposes, the farmer may as a general thing increase to a considerable extent the available area of his land—that is get more land—without acquiring it by purchase. He need not steal another farm, nor set the one he has up on edge and cultivate both sides of it. But if he render useful every foot of soil that he already owns, he will find himself getting perhaps many acres more than he now derives benefit from.

It is hard to make an Anglo-Saxon believe that he does not want a larger farm. Annexation is our mania. No sooner does a man "see his way out" of debt for the place he has, than he straightway longs to add a new purchase. He sees with covetous eyes the tempting excellence of adjacent territory possibly just over the fence. He imagines numberless advantages that would accrue "if he only had that strip." Mistaking broad acres for wealth, he shuts his eyes to the fact that he has really just got ready to farm profitably, and to the other fact that "shrouds have no pockets," works himself into the conviction that he needs the coveted piece, and proceeds "to [buy] again and be again undone."

Not to mention draining and other means of reclaiming land, we desire now merely to inculcate the duty of thoroughly picking up and clearing fields, particularly newly chopped, of all logs, brush, old stumps, scattering trees, rocks, and whatever obstacles may exist which impede the passage of the plow and harrow, or cover up the ground so as to stifle the growth of grass. A newly cleared piece is necessarily used for pasture for several years. We often see such, that appear scarcely half cleared. We have noticed some that, three years after they were chopped off, contained besides twenty or thirty scattering trees, as many more old logs fast becoming too decayed to burn, and numberless ancient brush-heaps, relapsing into the bosom of mother earth, and as they slowly crumbled away, providing perfect nests for Canada thistles, small burrs, and other pests, rendering worse than useless two or three square yards of ground each, and presenting an appearance as unsightly as their effect is pernicious. In a lot of five, ten or twenty acres, multitudinous small old brush-heaps will cover no little surface. A computation of the amount would surprise one who had given the matter no thought. Were they removed, how many more blades of grass would grow than the lot now affords?

The proper mode of procedure is, either in spring or fall, to go over the field in regular strips or "lands," pick, pile up and burn every stick, and after scattering the ashes, sow in the patches a few handfuls of timothy or other good grass seed. A new pasture thus treated will yield a surprising quantity of nutritious feed.

HAMPDEN.

Excellent Potato Yeast and Bread.

Boil one dozen good sized potatoes in three pints of water, with a small handful of hops, (in a bag) When thoroughly boiled, mash the potatoes through a cullender, rinsing them through with the water in which they were boiled. Then put in one tablespoonful salt, and one of brown sugar. When cool, stir in half a pint of yeast, and stand in a warm place till it ferments.

The night before you bake, boil five or six potatoes in pure water, and rinse them through the cullender, scalding hot, upon your flour. When cool, stir in a pint of your rising, and in the morning your sponge will be in nice order. Make into loaves, and bake as usual. If you object to the taste of hops, they may be omitted, and the yeast made with potatoes only.

This recipe is given by a colored woman, who has been forty years a cook, and is a capital baker.

S. E. M.

Mansfield, Pa.

Inquiries and Answers.

MOON'S INFLUENCE.—The Secretary of the "West Springfield Farmers' Club," in speaking of the discussions at a late meeting of the Club, remarks: "In connection with the subject of planting, the moon's influence upon vegetation was spoken of; several members said they had noticed that plants grew faster at the time of the full moon than at the time of the new moon—others say that the vines planted at the time of the new moon never produce fruit, although the vines grow luxuriantly. Now is this thing so, and how do you account for it? Please give us your ideas upon the subject in your next issue." [This "thing is not so," and consequently we cannot account for it. We have been in the daily practice of working among, cultivating, pruning, and observing trees, for thirty years or more, and during all this time, could never perceive the slightest influence of the moon. Many are led to adopt the belief, from making casual and occasional observations, remembering the coincidences, and forgetting or distorting the numerous failures. A mere "opinion" of this kind, cannot have the weight which would be due to long continued series of carefully recorded observations, pro and con—which, whenever they have been kept, have proved, as an average, about as much on one side as the other.]

SEEDING AND ENRICHING MEADOWS.—I sold the last year 14,160 pounds of timothy hay, which grew on a small field containing 3½ acres, at the rate of 90 cents per hundred, which amounted to \$127.44; from which deduct \$2.50 for cutting, \$5.50 for raking and drawing to barn, and \$8.00 for drawing to market, leaves \$111.44 as the net profit on 3½ acres, or \$35 per acre; which you perceive would be the interest of \$500 per acre. The yield of hay is not remarkably large. It is the fourth year's mowing without manure. The previous crops were corn, oats and wheat, with manure. Now what I wish to know is, if this field was summer fallowed and re-seeded to grass, it would be likely to produce as heavy crops of hay as formerly? The hay crop being the most profit, I would like to continue it, if it would not exhaust the soil by such a course. N. BARNES, JR. *Newburgh.* [If the ground were plowed again and manured at or before re-seeding, it would probably increase the crop of hay, provided the manure were left near the surface, and double the usual quantity of grass seed were applied. The roots of grass do not run deeply; yet they often derive benefit from manure buried beyond their length—a deep and rich soil supplying moisture to the plants in time of drouth. But manure has still greater effect if within a few inches of the surface, where the plants may obtain the full benefit, and their increased growth will tend to prevent the bad effects of drouth. If buried by means of a gang plow or coulter harrow, a good purpose will be answered. If the soil is quite light, manure for grass should be buried deeper than on clay. A surface dressing of compost or old fine manure, not only tends to make the seed vegetate better, but produces a more luxuriant after growth. But if there is already a thick even turf, we would not break it up, but depend on autumnal top-dressings of manure or compost, to maintain and increase the fertility. If, on the other hand, there should be many vacant spots, or the turf be uneven, it would be better to re-seed, with a heavy sowing.]

ENDLESS CHAIN HORSE POWER.—I would like to hear from some farmers who have used endless chain threshing machines. If I can't buy one that is recommended by those who have used them, I am determined to thresh the old way by tramping or flailing. J. B. TROY, O. [Endless chain horse powers for threshing have now been extensively used, and their value, when well made, has been fully established. Our correspondent need not fear to procure one from one of our best and reliable manufacturers. The little space they occupy enables the farmer to place them where they may be used in winter and on stormy days, not only for threshing, but for cutting stalks, sawing wood, grinding feed, &c., &c.]

ALDEN'S CULTIVATOR.—In your "Annual Register of Rural Affairs," I see a figure of "Alden's Cultivator," but I see no advertisement of the machine. Will you, in the next "CULTIVATOR," give us a notice as to where it may be found—or the address of the person who manufactures it. EDWARD GREEN. *Orange Co.* [It is manufactured by J. S. & M. PECKHAM, Utica, N. Y.]

HEN MANURE.—How should hen manure be applied to corn? If mixed, what with, and how much of the pure article should be applied to the hill? J. H. [It may be mixed with fine loam—or it may be pulverized and dropped with a planting machine with a guano attachment. A large spoonful will do for a hill of corn. Probably the easiest way, in

the absence of the planting machine, would be to drop a small handful at the spot designated by the marker for each hill, mix it by means of a rake or hoe a little into the soil, and then drop the seed.]

SHEEP SHEDDING THEIR WOOL.—Will some of your readers inform me how to prevent my sheep from shedding their wool? Some attribute it to feeding oats, but as I have not fed any, that cannot be the reason. Also what is the best feed to insure a great flow of milk? *E. P. Downingtown, Pa.* [Will some of our sheep-farmers give us the result of their experience on the subject?]

SORGHUM.—As we will be a good deal interested in the manufacture of sorghum here in the west this fall, we would be glad to have a minute account of the process of sugar and syrup making, from some of your correspondents who have succeeded well. *J. M.*

COMPOST FOR ONIONS.—I intend to sow half an acre of onions, and would like to make a compost of muck, wood-ashes and salt. Will some of your correspondents inform me through your valuable paper, the quantity of each. I wish to use as much salt as I can safely, thinking it will prevent the ravages of the maggot. *E. P. W.*

TRANS. N. Y. STATE AG. SOCIETY.—When will the Transactions of the New-York State Ag. Society appear, and how are they to be obtained? *J. H. W.* [The Transactions are issued annually about the 1st of October—that is, the vol. for 1860 will be issued about the 1st of Oct. next. They are published by the State for gratuitous distribution to the members of the Legislature and to the State and County Ag. Societies; but as many of those who are entitled to them, sell or exchange them for other works, they may often be found at the bookstore, and we can furnish several of the vols. at \$1 each.]

MUDDY CATTLE YARDS.—Many cattle yards (containing about two acres,) like all soil in this section of Illinois are very wet and muddy. Shall I get dry ones by underdraining, having fall enough, and will they be dry enough for sheep? How deep should the tile be placed, and what distance between the drains? Using 2 inch tile for the cross ditches, will this size answer for the main one? Will some one having experience please give me the requisite information. **CHAMPAIGN COUNTY.** [So far as the muddiness is caused by water in the subsoil, draining will relieve it—but such as results from rain from the clouds, from higher land, and off from the eaves, it will not. Carry off the drip from the eaves by troughs, and make the yard of some material that will not work up into mud, and the evil will cease. Paving is good, but stone may not be at hand. Plenty of dry straw, properly applied, will promote dryness, and with yard droppings will form good manure, if forked up into heaps in spring to decay.]

The tile should be about 3 feet deep. Two inch pipe tile will do for mains, if the whole length of draining it receives is not over sixty rods in the aggregate, with a fair slope. They may be one rod apart for a barnyard.]

PORTABLE STEAM MILLS.—Will you please give information through THE CULTIVATOR, in regard to the portable steam saw mills, the expense of one, and the amount of work they will perform in an hour or day. *J. C. E. Frost Village, C. E.* [Will some of our readers who have tried them give the desired information.]

STAGGERS IN HORSES.—I have a four-year old colt afflicted with the *blind staggers*; although I have tried several remedies which were recommended to me by my friends, &c, the horse grows no better. Having great respect for your opinion in such matters, will you be kind enough to recommend a remedy to me which has cured horses afflicted with the disease under your observation. *THEO. F. Philadelphia.* [Under the circumstances, we think our correspondent could not do better than examine the full article on this subject in Dadd's Horse Doctor. Any information from correspondents would be acceptable.]

WELLS IN SAND.—The difficulty Mr. Wm. Pease has with his well is one that is readily got along with. If there is water standing in the well, let down sand until the bottom is dry. Then place a wheel in the bottom, and if you can obtain well brick they are better—if not, common brick will do—lay them with cement. It will harden in a few days sufficiently to go to digging, and settle the brick as you dig. Sandy wells thus constructed, will last an age, and will not be troubled with sand running in. *JOHN J. SON.*

DESTROYING THE VITALITY OF SEEDS.—Can you tell us how to destroy the vitality of seeds in manure without injury to the latter? If there is any way to do so easily and cheaply,

you would oblige a young farmer from Maine, by stating the *modus operandi*. *T. F. C.* [Throw the manure into a heap or heaps, large and loose enough to cause active fermentation, killing the seed by the heat; and then, before the moisture is driven off, and the manure spoiled, mix with peat, muck, soil, &c., and make a good compost—the heat of the manure penetrating all parts and forming an excellent fertilizer.]

Low-Headed Trees.

MESSRS. EDITORS.—Will you please to inform me through the columns of THE CULTIVATOR, of the best mode of pruning young orchards when the object is to form low heads. Suppose the trees, (as a great many are when you get them from the nursery,) to be from five to eight feet high, with a single main stem, and a few small side branches—my object is to have the head low enough to protect the bodies. By answering the above, I think you will not only accommodate me, but the greater portion of your subscribers in the West. Also, which is the best book on rearing young orchards, and the best work on Kitchen Gardening, and the price of each. *J. M. C.*

Trees several years old, from dense nurseries, where they have run up to poles, are hard to train low; taking off one-half or one-third the top is the only way. It is incomparably better to purchase such as have been worked low, in thin rows, and which are not over three years old—two years would perhaps be better. Young thrifty trees, even if tall, may be cut back without difficulty, and trained as desired. At one or two years, the heads are readily formed by *thumb-pruning*, the best of all modes.

Barry's and Thomas' Fruit Books give the desired information on raising and managing orchards—price \$1.25 each. Buist on Kitchen Gardening, is a good work—price 75 cts.

[For the Country Gentleman and Cultivator.]

GRAFTING PEACH TREES.

Your reply to your correspondent, R. K., of Nashville, Ill., though doubtless correct in reference to your climate, may lead him into an error. Grafting the peach succeeds admirably here, scarcely more than five per cent., under favorable circumstances, failing to "take." We make use of the splice-grafting mode, having the stock and scion of about the same size, and plant out in nursery rows at once, leaving two buds of the scion above the surface of the ground, and one below. The operation is performed during the winter or very early in spring. Make a smooth cut, see that the bark of the stock and that of the scion perfectly coincide, (on one side, at least) and tie firmly with bass matting. If the grafts cannot be planted at once, they must be heeled in, or buried in moist sand in a cellar. Whether this mode will succeed in Illinois, or not, I cannot say; but it would be well for R. K. to try it next year. We commence budding here in June.

Vineley, (near Midway) S. C.

D. H. J.

BEST TIME FOR SETTING TREES.

EDS. CULTIVATOR.—I wish to impress it deeply on the minds of your readers, to have their *nursery trees*, especially those designed for the latitude of Vermont, dug and set out in the spring of the year. I have purchased many thousand trees, and I find it will not do to take a nurseryman's word in regard to the best time of digging and setting trees. Some recommend digging in the fall and heeling in, to be set out in the spring. I say let the tree winter where it grew, and when the right times comes round, let that job be considered paramount to everything else. Go to a nursery and select your trees, and have them dug with all the roots. They will try to make you take trees with the roots all spaded off. A tree with the roots cut off is worth about as much as a man with his head cut off. *H. STEARNS.*

BEDDING PLANTS.

The time is not distant when such plants as are not hardy and cannot stand our winters, but will flower freely in the open ground in summer, may be transferred from their winter quarters into the flower borders. In this latitude the 15th to 20th of May is generally the most favorable time for bedding out, although in some seasons they may be set out somewhat earlier; but on the whole it is safest to wait until the middle of the month. If possible, after they have been procured from a greenhouse, they should be placed in a cool frame for a few days so as to inure them gradually to the change of temperature, leaving off the glass every fine day, and also at night unless it is cold and stormy. Verbenas will be likely to do better if shifted from the small pots in which they are usually sold, into larger ones, and kept in a cold frame several weeks before planting out.

The best greenhouse plants for bedding purposes are Verbenas, Geraniums, Heliotropes, Petunias, Lantanas, Cupheas, Feverfew, (pretty hardy,) Gaillardias, Salvias, Nierembergias, &c.

Fuchsias are good bedders if they can be placed in a partially shaded situation, but they will not flourish if exposed to the full power of the sun's rays. Pelargoniums are beautiful when in bloom, but their bloom is of too short duration to entitle them to a high rank as bedding plants. The variegated leaved Geraniums have been introduced quite largely of late years for bedding purposes, but their foliage will not stand well our powerful sunlight. The Geraniums with sweet scented leaves, though very inconspicuous in bloom, yet deserve a place in every garden for use in bouquets. The delightful Aloysia citrodora or lemon-scented Verbena, should not be forgotten. A small bed of Lobelia is very pretty. The methods of planting are various. Most persons prefer setting the plants singly in the general flower borders. Many prefer setting them out in beds, a single sort and color to a bed; while others prefer them in beds of the same kind but of different colors. In large gardens, probably the most effective manner of planting, is a single sort and color in each bed; but this calls for a great number of plants, and unless there is a greenhouse on the premises, will be found too expensive for most persons to adopt.

Petunias may easily be grown from seed sown in a hot-bed and will flower profusely by July, continuing in bloom the whole season. There is no more showy bedding plant than this, and none so profuse in bloom. This, however, applies more particularly to the single varieties, as the double varieties are usually rather shy bloomers. G. B. H.

[For the Country Gentleman and Cultivator.]

L. L. Langstroth's Patent Bee-Hive.

EDS. CO. GENT.—I wish through your columns to make some statements to the bee-keeping public respecting my patent hive.

When I applied for this patent, I was not aware that movable comb hives had ever been used, except those with movable bars or the sectional frames of Huber. The former required the combs to be cut from their side attachments, while the latter were so costly and demanded so much experience, time and patience to open and close the sections, that notwithstanding they were invented at the close of the last century, they were confined almost exclusively to amateur bee-keepers.

In the first and all the subsequent editions of my work on the Hive and Honey Bee, I have given the plan of the Huber "leaf-hive," and while describing its defects, I never attempted to conceal my obligations to this "Prince of Apiarians." Speaking of him I say: "Very early in my apiarian studies, I constructed a hive on the plan of the celebrated Huber; and by verifying some of his most valuable discoveries, became convinced that the prejudices against him were

entirely unfounded." And again—"The use of the Huber hive had satisfied me that with proper precautions the combs might be removed without enraging the bees, and that those insects are capable of being tamed to a surprising degree. Without a knowledge of these facts, I should have regarded a hive, permitting the removal of the combs, as quite too dangerous for practical use."

In the first edition of my work published in 1853, I say: "If Huber had only contrived a plan for suspending his frames, instead of folding them together like the leaves of a book, I believe that the cause of apiarian science would have been fifty years in advance of what it now is."

Now if I had known that my hive was not so much better than Huber's as to deserve a patent, and if I had been base enough to attempt to palm upon the public substantially his invention as my own, can any man of common sense believe that I would have published to the world, just where and how I stole my pretended invention? And yet this is substantially what I have been charged with doing.

Since my application for a patent, I have ascertained that prior to my invention other movable frames, beside those of Huber, were in use in Europe. None of them, as far as I can learn after thorough inquiry, are any better than those of Huber. I would refer those who desire information on this point, to the *Cours Pratique D'Apiculture* of M. Hamet, published in Paris in 1859, which contains a larger variety of cuts and descriptions of hives than can be found, I believe, in any other work. All the modifications of the Huber hive are pronounced by Hamet to be useful only for purposes of observation, and he asserts that in the districts of France, where bee-keeping is most largely pursued, no movable frame hives here ever come into general use—and that the removal of the frames from the best of them is often more difficult than from the Huber hive. He closes his account of these hives with the significant remark, that "in a moment of enthusiasm he once supposed that such a hive might be cheaply made, but that he had tried it in vain."

Now compare these results in France, with the extensive use, by the best practical bee-keepers in this country, of the movable comb principle, and the inference will be almost irresistible that they have not yet invented a cheap and practical way of using movable frames.

In the Bee-keeper's Convention in Cleveland last March, an article was read from a recent English publication, in which all hives with movable frames are declared to have no practical value. Of all the movable frame hives now in use on the Continent of Europe, the Berlepech hive is probably the best—(for a description of this hive, see *American Bee-Journal* for Jan.) It was invented subsequently to mine, and uses essential features covered by my patent, without which this German hive would have no more practical utility than those which have so signally failed.

Allow me to give an extract, in this connection, from a letter received by me last fall from the Baron Evon Linsingen of Oznaborick, Kingdom of Hanover, dated 10th of August, 1860—"I feel convinced that no other apiarian has been able to construct a movable comb bee-hive in such an advantageous way as you have done. On the 20th of September, the apiarians from all parts of Germany assemble in Hanover to have a grand consultation about the hive and honey bee, and I wish you to send to my address two of your hives."

The order came too late to be filled in season for the convention. Were I to attempt to show in what particulars the various patents* in this country, using movable frames, have appropriated to a greater or less extent the essential and patented features of my invention, I should require more space than in the largest liberality you would be willing to give, besides opening a personal controversy in which comparatively few of your readers would feel any interest. This much, however, I wish to say, that in my opinion all of them use some of these features, and that without this use they would be of no more practical value than the European hives. I believe that the courts of law will sustain this opinion, and I should long before this have sought their protection but for my limited pecuniary resources, the state of my health which has caused the loss of more than half of my time for the last nine years, and the fact that other parties own the greater part of my patent. I have never sought for more than my rights, and if any one can show that before my invention there existed any movable frame hive adapted to practical use, or any invention that used the essential and patented features of mine, I will try to be the first to acknowledge that although an original inventor, I was not the first inventor of such a hive.

L. L. LANGSTROTH.

Oxford, Butler Co., O., April 10, 1861.

* Mr. Baldridge is entirely misinformed in supposing that there is no patent on the Harbison hive. It was patented in 1859.



ALBANY N. Y., MAY, 1861.

An article published in the COUNTRY GENTLEMAN of January 24th, from the pen of our contributor LEVI BARTLETT, contains some facts with reference to the farm of Hon. GEO. GEDDES at Fairmount, near the city of Syracuse. This farm includes altogether about 300 acres of land. It is, emphatically, a grain farm. We suppose there are few pieces of land of the same extent in this State, which exceed or equal it in natural capacity of production and endurance.

Some very brief notes which we had the opportunity of jotting down, in recently visiting Mr. G., will throw additional light upon the system there pursued and the results obtained, which will be of interest in connection with the statements relating thereto already from time to time given in our columns. It will be seen that natural capacity is not the only reliance upon which dependence is reposed.

We give in the first place an approximative statement as to the division of the land last year. There were

In winter wheat,.....	66 acres.	In oats.....	33 "
In spring do.,.....	12 "	In Indian corn.....	32 "
In clover—1st crop hay,		In Herd's grass.....	16 "
and second crop clover		In pasture, say.....	65 "
seed,.....	26 acres.		

The farm includes a pond of several acres, and the remainder of the land is in wood, or otherwise less productive.

As to the stock on the place, there were 284 sheep sheared, and 11 horses kept, beside seven cows, a pair of steers, and the pasturage of six more cows belonging to cottagers; for it is found preferable—indeed almost essential, to adopt the plan which has been so frequently recommended in our papers, of employing assistants with families who occupy cottages rented to them, instead of the old way of boarding single men in the farm house.

In 1859 the crop of winter wheat averaged 28 bushels per acre; in 1860 the promise was equally good, but the Hessian fly came in, rendering about one-half of it almost a failure, 33 acres only producing 10 or 12 bushels per acre—the other 33 about 25 bushels. The oats last year averaged 64 bushels per acre—the corn 67½. The number of sheep now in the yards, we should add, is about 300.

Our readers have been already informed that clover and plaster are considered by Mr. Geddes as the great standby in keeping up his crops. But a little consideration of the foregoing figures will prove that a very fair amount of straw must be cut each year; and that this straw trodden under foot by the stock above mentioned, will of necessity supply some fertilizing material of another kind.

Indeed as the manure is managed—the sheep yards, thickly littered, accumulating several feet in depth during winter, which is in spring neatly piled, *not* under shelter, because the rain is wanted on it to prevent fire-fanging—and, by autumn, thoroughly rotted and in the best order for application—it is almost astonishing what an immense amount of it is thus obtained, and at comparatively little cost for labor.

There are two barns—one eighty by twenty feet, the basement of which is divided, by racks extending from floor to ceiling and filled with fodder from above, into four compartments for the sheep, each compartment opening into a yard of its own breadth (20 feet) and 50 feet deep—the other barn adjoining, 40 feet by 75, including a central floor of 35 feet, beneath which the basement is to be occupied as a hospital for lambing ewes, and a bay on either side 20 feet in width and open down to the ground. The width of the floor is such that two loads can come in abreast if desired; and an immense quantity of grain may be thrashed here without inconvenience, the thrashing machine employed carrying out its own straw into the yard, where it is stacked at 15 or 20 feet distance from the barn. This Cattle-yard has a third grain and hay barn

on the opposite side, with stables beneath for the farm horses, and is enclosed with walls for the remainder of this and the other two sides.

The basement of the two barns described is eight or nine feet high—the smaller of them 16 foot and the larger 20 foot posts above the basements. The racks mentioned, in which the fodder is dropped down to the sheep through openings in the floor above, are composed of slats too near together (2 or 2½ inch spaces) for the sheep to thrust their heads into the hay far enough for the seeds to get into their wool. Mr. Geddes finds the arrangement of the sheep-barn work so exceedingly well in practice, that he thinks it can scarcely be rivalled, and for convenience, tidiness and apparent excellence in all other respects, the writer certainly has never seen its superior.

These notes are too extended for more than a word with regard to the sheep themselves, which are of Merino descent, with a Saxon fineness of wool readily commanding 50 cents a pound; they are of good size, having long been bred with a view both to this object and to fineness of the wool, which is not laden down with grease although by no means dry—altogether a flock which no lover of the Fine-Wools could pass by without notes of most sincere and earnest admiration. Even one who must confess to a bias for the Downs and Leicesters—in these times of low mutton markets—cannot help appreciating merit of another sort; and as to mutton even, Mr. G. is going to convert us, hereafter, to the Merino faith, when one of those wethers is properly ready for the knife.

The farm, we should add, has been for some time back carried on by Mr. JAMES GEDDES, who has his father's encouragement and advice in every improvement he undertakes; and we believe that the two gentlemen have been plotting together with a view eventually of making their 300 acres support 500 sheep, yield still larger grain crops, and continue to improve in fertility several per cent. each year at the same time. Our space has allowed us barely to present a skeleton of their system of management—to which we deem it scarcely necessary to add that, neither from his own experience, nor from that of other good farmers around him, is Mr. G. led to express the most remote doubt with regard to "the profits of farming" if set about in the right spirit.

MASSACHUSETTS BOARD OF AGRICULTURE: Eighth Annual Report of the Secretary, together with Reports of Committees appointed to visit the County Societies. For 1860.

We are indebted to our Boston correspondent, "GEORGE," for an early copy of this Report. It opens, as matter of course, with the details of the most prominent event in the Agricultural history of the past year in Massachusetts, the Cattle Disease. But several other papers are also of considerable length, and will be of value to farmers in all parts of New-England. One of these is the Report on Sheep Husbandry, submitted by the Committee of which J. S. GRENNELL, Esq., was Chairman. After reviewing the progress and decline of sheep husbandry in the State, the different breeds, and the purposes and localities to which each is best adapted, are referred to, and their management in summer and winter, and principal diseases, are also treated at some length. The Report on Root Crops, by G. M. ATWATER, Esq., follows, and will attract increased attention to this important subject. An extended paper upon Horses is submitted by the committee of which Prof. W. S. CLARK was chairman; one upon the flowage of lowlands, by that of which C. G. DAVIS was chairman—and several of the delegates' Reports upon County exhibitions—that for example, by Mr. GRENNELL, of a visit in Martha's Vineyard, are unusually full and interesting.

GRAIN PRODUCT OF AN ILLINOIS SCHOOL DISTRICT.—A correspondent of the Prairie Farmer gives the following statistics of the grain grown last year in a single school district in Lee Co., Illinois, as gathered by the teacher. "District No. 3, four miles south east of the city of Dixon, contains 24 families, and an area of less than two by three miles. Number of bushels of wheat, 24, 692; corn 41,428; oats 12,556; barley 1,917; rye 533; buckwheat 483; clover seed 182; potatoes 2,084.

On former occasions we have more than once alluded to the dependence of Great Britain—notwithstanding its own immense production—upon its Imports of Agricultural Products from other Countries. As being, financially, an element of vast importance in the business operations of the United Kingdom. As rendering all its commercial interests,—wonderful in extent as they are,—comparatively speaking, a secondary consideration, on the occurrence of a year of famine or of floods. As necessitating a degree of skill in the management of its Farms, which shall obviate, as far as lies within human power, the chances of season and the stubbornness of the earth, and in the language of ARTHUR YOUNG, “turn its climate to the best account.”

And as an argument for the collection there of Agricultural Statistics, the same great fact is urged most forcibly in the North British Agriculturist of March 20, in noticing a Resolution passed at the Winter Meeting of our State Agricultural Society in favor of their collection here. Our contemporary presses the importance of the subject upon the attention of Agricultural Societies there; “hitherto the attempts made have been defeated in the House of Commons by the agricultural members, and no bill which provides for the collection of statistics either by compulsion or by the free will of the occupants of the soil can be carried through Parliament except agriculturists show that they desire statistics,” while “agricultural associations could effect much to weaken, if not to ultimately eradicate prejudices against statistics, were the subject occasionally discussed at their meetings.”

“The imports of agricultural products,” it says, “have now assumed such an extraordinary amount that it becomes an imperative duty of the Government to adopt means to collect information regarding the produce of our own soils—not alone for ascertaining what is produced, but for aiding the further development of the productive capabilities of those soils.” Let us look for a moment at the statement subjoined by the N. B. Agriculturist, showing wherein these imports consist, and what an amount of money they represent; for the demand in Great Britain for the products of American Agriculture, is a matter of almost vital importance to the prosperity of our Farmers, and one which they cannot study too minutely. We condense the table into as concise form as possible, abridging its details in order to show merely the main sources from which Great Britain has derived her supplies during two years past, and their declared value according to Board of Trade returns.

IMPORTS OF WHEAT INTO GREAT BRITAIN—		1859.	1860.
From Russia.....		£1,872,049	£3,551,907
Prussia.....		1,879,784	3,410,161
France.....		2,420,224	1,618,762
United States.....		80,908	4,323,806
Denmark, Mecklenburg, Hanse Towns, Turkey, Wallachia and Moldavia, and Egypt.....		1,892,944	2,519,830
Other Countries.....		567,623	1,139,615
Wheat.....		£8,713,582	£16,554,083
Wheat Meal and Flour—from France.....		1,954,248	1,594,030
United States.....		151,344	1,826,582
Other Countries, ...		287,371	899,946
Total value of Wheat and Flour,...		£11,106,545	£20,874,641

It has been said that the Wheat Plant is the emblem of Civilization—a saying which seems confirmed by the most solid of all arguments, when we find a single nation paying out in the single year 1860, over *One Hundred Millions of Dollars* for this single grain—an amount almost double the imports of 1859, owing to the very wet and tempestuous season.

The value of the other agricultural products imported in 1860, was:—

GRAINS.		LIVE ANIMALS AND MEATS.	
Barley.....	£3,356,903	Oxen, Bulls and Cows,	£1,155,150
Oats.....	2,624,158	Calves.....	82,677
Peas.....	617,846	Sheep and Lambs.....	640,438
Beans.....	793,451	Swine.....	122,260
Indian Corn.....	3,165,204	Salt Beef.....	847,875
Rice, not in husk.....	1,023,108	Bacon.....	870,286
Butter, in 1859.....	£2,080,143	do. in 1860.....	£4,078,017
Cheese, do.....	1,039,180	do. do.....	1,597,569
Tallow, do.....	2,933,066	do. do.....	4,014,280

By multiplying these amounts in pounds sterling by five, the number of dollars represented will be ascertained, nearly. And including, with the above, *Flax* to the value

of £3,836,770 (mostly obtained from Russia and Prussia) and *Wool* to the value of £11,031,379 (of which about one-half comes from Australia)—we have as the aggregate amount of the Agricultural Imports thus enumerated for the year 1860, the very pretty gross sum of about *eight hundred and fifty millions of dollars*, or something like \$28 for each man, woman and child from Queen Victoria down. To all this is to be added some millions more for *Cotton*, which is not included in the figures of our contemporary; the exact value imported into Great Britain in 1860, we have not the means at hand of determining.

It is never unpleasant to obtain confirmation of one's own views. We have frequently expressed our opinion of the great importance of proper Ventilation to the health and thriving condition of the domestic animals of the Farm, and we have been glad to see in many of the best barns and stables of recent erection, the disposition manifested to pay so strict attention to the requirements of our horses, cattle and sheep, in the respect referred to.

Our attention is now attracted to the subject by a passage in the recent work of an eminent foreign writer, from which we deem it fair to conclude that among practical men in England it is thought that Swine require cleanliness and ventilation as well as other animals, not only in order that they may accumulate flesh to good advantage, but also that the character of the resultant pork or bacon, may stand the test of the epicure in such matters. Whether the writer alluded to, Mr. C. DICKENS, will be received as an agricultural authority on general subjects we do not know; but, in the present instance, those of our western friends would probably agree with him, who think there is nothing like roving in a good clover field under the free air of heaven, to fatten pigs just right. It is the large-hearted, awkward, and not very bright, but very patient and practical blacksmith, in a recent chapter of “Great Expectations,” who is speaking:—

“Your servant, Sir,” said Joe, “which I hope as you and Pip,”—here his eye fell on the Avenger, who was putting some eggs on the table, and so plainly denoted an intention to make that young gentleman one of the family, that I frowned it down and confused him—“I meantersay, you two gentlemen—which I hope as you get your elths in this close spot? For the present may be a verry good inn, according to London opinions,” said Joe, persuasively, “and I believe its character do stand i; but I wouldnt keep a pig in it myself—not in the case that I wished him to fatten wholesome and to eat short with a meller flavor on him.”

The Board of Agriculture of the Province of New Brunswick have decided to hold the triennial Provincial Exhibition at Sussex, Oct. 1—4, 1861. The Province grants \$3,000 toward the Exhibition, which amount will be offered in Premiums for Stock, Produce, &c.

It is moreover stated that the sum of \$4,000 has been raised in the Province, and placed at the disposition of the Board, to purchase or procure articles necessary to represent New Brunswick advantageously at the great Industrial Exhibition at London in 1862. The *St. John News* thinks that “New Brunswickers only want a fair stage and no favor,” at the coming “World's Fair;” they are at least, we think, the first on this side the Atlantic, to take the proper steps toward due preparation for it. The example should not be lost to the Manufacturers and Farmers of New-York, and other States.

SHEEP KILLED BY DOGS.—A correspondent of the *Prairie Farmer* gives the following remedy: A wool grower had suffered from dogs. He procured a worthless slut, tied her up at a certain season, dug several graves, laid around some meat with strychnine in it. In the morning the dogs were lying around dead, and he quietly buried them. The “season” comes around two or three times each year.

In some States, the annual loss to flocks is over a hundred thousand dollars; the loss by the death of dogs as above, if it were generally practiced, would probably be not so great.

We learn that J. S. GRENNELL, Esq., of Greenfield, Mass., has just received from England a number of choice Rouen Ducks.

☞ We are indebted to Mr. MECHI for a copy in pamphlet form, of the paper read by him before the London Central Farmers' Club, Feb 4, 1861, and referred to very briefly in the last number of the COUNTRY GENTLEMAN. Its subject as there stated, is the Past, Present and Future of English Agriculture. Some curious statistics are given of very early times—such as the prices established by law in the year 866, when a goat was put down at twopence, a sheep at a shilling, a cow at five shillings, a mare or a man (a slave) at twenty shillings, and a horse at thirty shillings! We are told that in the 15th century eight or nine bushels of wheat per acre was considered "a good crop" in Suffolk, or hardly four to one on the seed sown; and "roast beef at Christmas appears to have been a luxury of modern times, for, formerly, as soon as the depasturing season ended, the fat animals were killed and salted, to prevent their becoming lean again—the hay being required for cows and young growing animals."

We could wish that Mr. MECHI had been fuller in tracing the progress of Agriculture during the past half-century. He contents himself with pointing to the several leading features in it, and this very briefly. And as to the "Future" of English Agriculture, he says it must be based on a general use of Steam Power—in cultivation, on the road, everywhere where power is employed—and on the "formation of Public Companies for the Improvement of Agriculture."

There is one point worthy of passing notice—the high credit awarded to Farmers' Clubs and Agricultural Societies for the beneficial influence exerted by them in promoting Agricultural progress, and above and beyond this to the Agricultural Press, as being the medium through which most of the good effected by the Societies, has in reality been accomplished.

☞ The *Journal d'Agriculture Pratique* for the 20th ult. brings us the Ministerial Decrees relative to the Great Regional Agricultural Exhibitions, to be held throughout France during the month of May. As was described in the Foreign Correspondence of the Co. GENT., each of these "Regions," which are twelve in number, embraces several Departments, and the whole direction, management and expense of the Agricultural Exhibition held in each Region, are borne by the government directly. At each of the exhibitions prizes are offered for cattle, sheep and pigs. In addition to prizes for breeding animals of the native breeds, prizes are offered for animals of English breeds, and crosses of the Short-Horn upon the native cattle of the country. As matter of curiosity we subjoin a statement of the amount and number of cash prizes and medals to be awarded, showing a total of nearly \$128,000 devoted by government to paying premiums, aside from the medals, and other expenses attendant upon the shows:

	Sums in Prizes.	Number of Prizes & Med.
For Cattle,	404,185 francs.	1,274
Sheep,	85,735 do.	403
Pigs,	36,390 do.	250
Poultry,	5,300 do.	187
Implements,	2,422
Produce,	204
Prizes of honor and service,	108,000 do.	180
Total,	639,610 francs.	4,920

It will be noticed that Horses are not included in this list. Special exhibitions are to be organized in connection with new arrangements respecting the Government Studs, of which the particulars are promised later in the season. With regard to the Premiums on Farms, or rather on farm management, which are given above under the head of "prizes of honor," it is stated that 148 Farms are now entered for the Prizes to be awarded in 1862, to which visits are to be made as soon as the Shows of the present year are over. Those receiving prizes in 1861 were thus entered a year ago, and examined by those awarding the prizes during the past season.

☞ At the last meeting of the Council of the Royal Ag. Society of England, a collection of agricultural implements, manufactured in Montreal, "many of which appear to be of excellent construction and remarkably cheap," was presented by His Grace the Duke of Newcastle, by whom they had been brought home from Canada.

☞ The ensuing annual meeting of the Royal Agricultural Society of England is to be held at Leeds in the week commencing on Monday, July 15th. The show ground will be about 20 acres in extent. The amount offered for prizes is as follows:—By the Society, for horses, cattle, sheep and pigs, £960; for implements, £510; by the local Leeds Committee, £800; total, £2270—which is a larger sum than ever offered at any previous meeting of the society. The trial of implements, except steam cultivators, will take place at or near the show-ground; but the steam cultivators or steam plows will be tested on about 2000 acres of land at Garfourth, about seven miles from Leeds.

☞ Our friend and occasional correspondent, Dr. M. W. PHILIPS of Mississippi, is widely known for the efforts he has put forth in the advancement of the agriculture of that State. His contributions to the "Southern Rural Gentleman" should elicit the attention and provoke the imitation of the Planters and Farmers into whose hands it comes; and a correspondent of that journal, who has just visited him, shows that the Dr. practices what he preaches, while his herd of Devons and his improved swine of various breeds—Essex, Neapolitan and Berkshire—appear to be completely acclimated in their southern home—"all thriving, healthy and doing well." They receive many compliments upon their excellence and judicious selection.

☞ Col. B. P. JOHNSON, Secretary of the N. Y. State Agricultural Society, last week received through the Russian Consulate at New-York, a Diploma from the "Scientific Committee of the Imperial Ministry of Domains," as a Corresponding Member of that body,—under date of St. Petersburg, Oct. 7, 1860, and bearing the signature and seal of the Minister of the Imperial Domain.

☞ Our last English Agricultural exchanges contain the announcement that Mr. JONAS WEBB has resolved to discontinue the breeding of SOUTH-DOWNS—a breed of sheep which owes much of its present fame to this distinguished agriculturist. "A public sale at Babraham during the second week of July is to disperse the whole of this valuable flock, and doubtless over both hemispheres."

☞ We have received several inquiries with regard to the new provision in the POSTAGE LAW, by which SEEDS, CUTTINGS, &c., are entitled to transmission by Mail at one cent per ounce. Mr. THORBURN, Seedsman, of this city has obtained from the authorities at Washington the amendments to the law, passed at the last session of Congress, and the section referred to reads as follows:

"Section 17. And, be it further enacted, That cards, blank or printed blanks, in packages weighing at least eight ounces, and seeds and cuttings in packages not exceeding eight ounces in weight, shall also be deemed mailable matter, and charged with postage at the rate of one cent an ounce, or fraction of an ounce, to any place in the United States under fifteen hundred miles, and at the rate of two cents an ounce or fraction of an ounce, over fifteen hundred miles, to be prepaid by postage stamps."

This settles the whole matter, and Postmasters will act accordingly. But packages containing seeds and cuttings should in all cases be distinctly marked as such on the outside.

CHEAP CORN SHELLER.—The Corn Sheller noticed on p. 157, is an old Yankee notion. A large strong cask is made, with a head about a foot from the bottom, which is better than placing a half bushel measure under a cask. They are very useful to shell garden beans and peas, when one has but a small quantity. But the cheapest corn sheller, if one has a large quantity of corn to shell, is the old fashioned flail, a good floor, and the brawney arm of the farmer. In this vicinity but little corn is shelled, except for family use. It is the practice of most to grind the corn in the ear, and I have never yet heard of any ill effects from feeding the provender. On the contrary, it is considered by many better for stock. C. W. G. Mass.

[For the Country Gentleman and Cultivator.]

TARES---RAPE---SOILING.

EDS. CO. GENT.—I see some inquiries about fall tares in a late number of the Co. GENT. I think the fall tares not so sure as spring tares. I have grown the spring tares to advantage, and find them very good for soiling purposes. My mode of culture is as follows: I select a piece of ground near the farmstead—prepare it in fall by giving it a good dunging, which I plow in, for the winter's frost tempers and makes it more friable. About the first week in April put on the cultivator. Bring it to a fine tilth, and then sow 2 bushels of seed per acre. By sowing thick and having the ground in good heart, they grow much quicker. I finish off by rolling. It leaves the surface more even, and makes the mowing more easily accomplished. I have never attempted to raise a root crop off the same piece of ground, but it can be done, for the first crop of tares will be taken off by the middle of July, which leaves ample time for a crop of yellow or white turnips. Some people say they mow the tares twice over, but the way I have done is to mow once, and pasture with sheep the second crop. After soiling with tares I commence with rape, which is sown in the middle of May. Grow 2 acres of tares, and from 5 to 10 of rape, which is all eaten off before winter. Part of the rape is consumed by sheep on the ground, which leaves the land in fine condition for spring wheat.

If A. S. of Morpeth, wishes to keep a succession of soiling crops, to come in all through the summer, I would advise him to grow rape, for it is the best crop I have tried for sheep, cows, or young stock of any kind. I always wean the young lambs on rape, and find it makes them grow the best of anything I have seen. If he wishes more information about growing rape, I will very freely give it to him. J. K. *Guelph, Canada West.*

[For the Cultivator and Country Gentleman.]

TYING GRAPES.

The best and cheapest material to tie grapevines to stakes or trellises, is basket willow; any small tough willow twig will do. Every vineyard should have its willow patch; it is then always handy, can be used at any time, makes a strong ligature, which, when dry, can only be loosened by cutting with a knife. It costs little or nothing, merely the setting out of the willow; is better than twine, bass matting, or any other substance, and the labor is performed in less time, for when a vine is once seized with the willow it cannot slip out of one's reach, as is the case with other materials used for tying, which often causes much annoyance. Some persons are prejudiced against willow ties, saying that no one but a German can use them. As this is contrary to the commonly received opinion, that "a Yankee can do anything if he tries," I recommend to grape-growers who have not tried it to do so. My opinion is that in future they will use nothing else.

Mortonville, N. Y.

W. A. WOODWARD.

[For the Country Gentleman and Cultivator.]

FRUITS AND GRAPES IN TEXAS.

EDS. CO. GENT.—Owing to the extremes of heat and cold in a large portion of Texas, and also the great drouth to which it is subject, the State is not well adapted to the culture of fruit. Apples, pears, plums and cherries, do not thrive, nor do the Isabella and Catawba grapes. The native grapes—of which the "Mustang" is one of the best for wine making—could be cultivated with profit. The Mustang is a very abundant bearer, and there are instances in which one vine has produced more than sufficient grapes for a barrel of wine. The Post Oak is another native grape of excellent quality, being large, purple, with a thin skin, and a fine slightly acid flavor. However its low habit prevents much of its fruit from getting ripe, and

there are few persons who have been permitted by the hogs and turkeys, to eat mature Post Oak grapes. I fortunately obtained some last summer, and they are surely worthy of extensive cultivation in this climate. It rarely grows more than five or six feet high. Another indigenous species peculiar to the hills northwest of Austin, is also of low habit. It is white, and said to be of fine flavor. It is of medium size, and its pleasant taste has already induced some to transfer it to their gardens. At first I thought it must be the *Vitis rupestris* of Scheele, but according to the Mexican Boundary Report, that species is black when ripe. It is very doubtful whether any of the Texas grapes will thrive in other sections which have a very different climate.

S. B. BUCKLEY.

Austin, Texas, March 31.

The Annual Report of the Trustees of the N. Y. STATE AGRICULTURAL COLLEGE, transmitted to the Legislature by Gov. MORGAN, Jan. 17, has been printed. A class numbering 27, has been engaged in study at the Institution at Ovid, since the winter term began, Dec. 5, and from the large number of inquiries constantly received, increased attendance is anticipated with the opening of the summer session. Among donations to the College since the last Annual Report, the following liberal gifts attest the public spirit and generosity of their respective donors:—

Major M. R. Patrick,.....	\$250	James O. Sheldon,.....	\$250
B. N. Huntington,.....	257	Jona. Thorne,.....	500
James Boorman,.....	250	E. G. Faile,.....	250
Gov. E. D. Morgan,.....	250	Lewis G. Morris,.....	250
Loring Andrews,.....	100	Thomas Frazer,.....	100
Wilson G. Hunt,.....	100	Thomas Small,.....	160
Chas. H. Russell,.....	100	B. M. Whitlock,.....	250
T. Hall Faile,.....	250	James Brown,.....	250
C. Buckhalter,.....	100	James McLean,.....	100
John A. King, Jr.,.....			\$50

A Few Things, with the Reasons Why.

Buy good tools, for they are the cheapest; keep them dry and clean, for they will last one-third longer.

Keep your buildings up from the ground, for you will thus save many dollars in repairs. Have a good water-lime stone wall under all your out-buildings, for this makes them many degrees warmer. Leave holes in the wall for ventilation, that can be closed in winter, for thus you will preserve the sills and sleepers from decay.

Have good stock, for this is the only kind that "pays." Feed them well; for then they will feed you. Bed them well with straw; for the extra manure you thus gain, will grow twice as much straw for next winter's use.

Take an agricultural paper, for it is very useful. Read it too, for then it is more useful. Practice what you think is right, after reading, for then it proves most useful.

Palermo, N. Y., 1861.

G. B. J.

COE'S SUPERPHOSPHATE OF LIME.—

The subscriber has the above article genuine, and is prepared to furnish it in bags of 125 pounds, or by the ton from one to ten. Terms made known on application.

Circulars sent gratis.

WM. THORBURN, Seedsman.

April 25—w&mtf.

490 & 492 Broadway, Albany.

WM. R. PRINCE & CO., FLUSHING N. Y.,

Will sell trees at the following reduced prices, by the hundred. Apples \$14—Dwarf Pears \$25—Standard Pears \$30 to \$40—Standard, and Dwarf Cherries \$15—Peaches \$8 to \$10—Plums \$25 to \$30—Quinces \$14. Grapes at very low prices. April 25—w&mtf.

FERTILIZERS.**FOWLE & CO.'S SOLUBLE PHOSPHATED PERUVIAN GUANO.**

Superior to Peruvian Guano alone and twenty per cent. cheaper.

FOWLE & CO.'S SUPERPHOSPHATE OF LIME.

These Fertilizers have been generally tested by the most intelligent farmers of Virginia and Maryland, with the most satisfactory results. Pamphlets containing analysis of Prof. Campbell Morrill, of New-York, with testimonials, and other valuable information, will be supplied by mail, and orders will be promptly executed upon application to the agent, EDWARD FRANKS, 42 Exchange Place, New-York. April 18—wtfm2t. FOWLE & CO., Proprietors, Alexandria, Va.

BEE S AND BEE KEEPING—

A Plain, Practical Work, with directions how to make Bee-Keeping a Desirable and Lucrative Business, and for Shipping Bees to California. By W. C. HARRISON. Price \$1, by mail post paid. For sale by L. TUCKER & SON, Co. Gent. Office, Albany, N. Y.

THOROUGH-BRED AYRSHIRES.—

Three BULLS—one 4 years old—one 2 years old—one yearling.
One COW, 6 years old, with bull calf by her side.
These are all fine specimens of the breed, with perfect pedigrees,
and will be sold low. Address **ALFRED M. TREDWELL,**
April 11—w4mtt. 45 Fulton-street, New-York City.

**SEEDS BY MAIL—
POSTAGE****ONE CENT PER OUNCE!****SEND YOUR ORDERS!!****CATALOGUES ON APPLICATION.**

WM. THORBURN, Albany Seed Store,
April 11—w2mtt. 490 & 492 Broadway, Albany, N. Y.

**LANDSCAPE GARDENING AND RURAL
ARCHITECTURE—Landscape, Agricultural and Civil Engineer-
ing, Surveying, Leveling and Draughting.****GEO. E. WOODWARD,**

**Architect, Civil Engineer & Draughtsman,
No. 29 BROADWAY, NEW-YORK.**

Country Seats, Parks, Rural Cemeteries, and public and private
roads, laid out and superintended. Plans, Elevations and Working
Drawings for Buildings in all departments of Rural Architecture, pre-
pared and mailed to any section of the country. Consultations
gratuitous, personally or by letter, March 21—w&mtf.

ITALIAN BEES AND QUEENS FOR SALE.

For particulars send early for Circular. **M. M. BALDRIDGE,**
March 14—wew5tm2t. Middleport, Niag. Co., N. Y.

EXTRACT OF TOBACCO.—

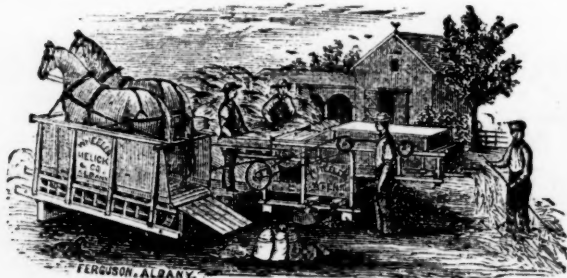
For dipping Sheep and Lambs, and for destroying all kinds of
vermin on other animals.

The manufacturers of this new and valuable preparation, beg leave
to call the attention of Farmers and Graziers to this effectual remedy
for destroying Ticks, Lice, and all other insects injurious to animals
and vegetation, and preventing the alarming attacks of the Fly and
Scab on Sheep.

Its use not only removes the vermin on animals but cleanses and
purifies the skin, thereby materially benefitting their general health,
and greatly improving wool, both in quality and quantity.

This article completely supersedes that LABORIOUS and DISAGREEABLE
work of preparation in your own buildings for sheep-washing, as it is
ready at all times, in any climate, and for all descriptions of Sheep,
even for Ewes in lamb, and can be furnished at a reduced cost.

March 14—w&m3mos. **FISHER & CO., Sole Agents.**
23 Central Wharf, Boston.

**NEW-YORK STATE
AGRICULTURAL WORKS.****WHEELER, MELICK & CO., Proprietors, Albany.**

Manufacture Wheeler's Patent Railway Chain

HORSE POWERS,

for one or two horses.

PLANTATION HORSE POWERS,

(four horse or six mule levers.)

Wheeler's (Improved) Patent Combined

THRESHER AND WINNOWER,

(No. 1, 30 inch, and No. 2, 26 inch Cylinders.)

OVERSHOT THRESHER AND SEPARATOR,

and other FARMING MACHINES for Horse Power use.

The subscribers are inventors of all the above machines, and give
their entire attention to the manufacture of them, and having had
the longest and largest experience of any firm in this business, feel
warranted in saying that THEIR MACHINES ARE UNEQUALLED.
They call especial attention to their

IMPROVED THRESHER AND WINNOWER,

of which over 400 were sold in 1860, satisfying all purchasers of their
superiority and economy for threshing, separating and winnowing at
one operation.

CIRCULARS containing list of PRICES and full DESCRIPTIONS
and CUTS of each MACHINE, with statements of their capacity for
work, will, on application, be sent by mail, postage free.

Liberal discounts are made to Dealers. Responsible Agents
wanted in sections where we have none. Address

WHEELER, MELICK & CO., Albany, N. Y.

April 4—wew6tm3t.

SHORT-HORN BULLS FOR SALE.

The subscriber offers for sale four Short-Horn Bulls, all of fine size
and symmetry; three of them are out of imported cows by import-
ed or the get of imported bulls of Bates stock, and the other by an
imported Bull, out of a cow of the Princess stock:

DUKE OF RUTLAND—white, calved June 6, 1859; got by Duke of
Cornwall, 2757, out of imported cow Famous, by Mr. Bates' Earl Der-
by, (10177.) &c., &c.

DUKE OF CHESTER—roan; calved Aug. 28, 1859; got by imported
Duke of Portland, 1482, out of imported Lady Liverpool by Mr. Bates'
3d Duke of York, (10,166.) &c., &c.

BEDFORD—white; calved Sept. 9, 1859; got by imported Duke of
Portland, 1482, out of Duchess of Exeter, by imported Duke of Exeter
(10152.) &c., &c.

DUKE OF RICHMOND—red; calved Oct. 6, 1860, got by imported
Duke of Portland, 1482, out of imported Alice Maud, by Grand Duke,
(10284.) &c., &c. Address **Dr. HERMAN WENDELL,**
March 14—w&mtf. Hazelwood, Albany, N. Y.

BLACK HAWK STALLIONS FOR SALE.

HERO—Nine years old, 15 hands high, coal black and very fast. Got
by "Hill's" "Old Vermont Black Hawk." Dam by "Sherman
Morgan." Grand-dam by "Membrino." Price, \$1200.

KENTUCKY HAWK—Six years old, 15 hands high, dark chestnut
and very handsome, has trotted in 2:48. Got by "Hero," dam
half sister to the celebrated pacing mare "Pocahontas," got by
"Cadmus," and out of a thorough-bred mare. Price, \$1,000.

CAYUGA HAWK—Four years old, 15½ hands high, rich sorrel, has
trotted in 3:10, on an eighty rod track, without training, and
bids fair to outfoot "Kentucky," his full brother. Price, \$1,000.
If not sold by the 1st of May, "Hero" will be rented for the
season or on shares to any one giving proper security. Full
particulars and pedigrees furnished by addressing

THOMAS GOULD, Aurora, Cayuga Lake, N. Y.

March 21—w4mtt.

THOS. WOOD continues to ship to any part of
the Union, his celebrated **PREMIUM CHESTER CO. WHITE
HOGS**, in pairs not akin, at reasonable terms. Address,
Jan. 10—w&mly. **PENNINGTONVILLE, Chester Co., Pa.**

FIRST PREMIUM AS BEST MOWER

AWARDED BY

**N. Y. STATE AGRICULTURAL SOCIETY,
At Elmira, October, 1860.**



AS IT APPEARS ON THE ROAD

BUCKEYE MOWER**WITH FLEXIBLE FOLDING-BAR.**

The unprecedented success of this machine is a convincing proof of
its excellence. It has never failed, wherever introduced, to take pre-
cedence over all other Mowers, and the important principles COVER-
ED BY ITS PATENTS are now universally conceded to be indis-
pensable to a

PERFECT MOWER.

This concession is in the strongest manner attested by the fact that
so many mowing machine manufacturers, abandoning their own pat-
terns, are now modelling after the BUCKEYE in all points where
they think it possible to evade its patents, and the popularity of their
machines is found to be in exact proportion to the extent of their imi-
tations and infringements. The farmer who contemplates purchasing
a mower for the harvest of 1861 will, in selecting the Buckeye, secure
the only machine which

COMBINES ALL THE REQUISITES

of a perfect Mower, including strength, durability, simplicity, light-
ness of draft, freedom from side-draft, portability, convenience, per-
fect adaptation to uneven surface, ease in backing, safety and com-
fort to the driver, ease to the team, and capability of doing

GOOD WORK ON ANY DESCRIPTION OF LAND,

and in any variety or condition of grass.

Farmers wishing to avoid disappointment will give their orders early
in the season.

Circulars, with full description and testimonials, forwarded by mail.

JOHN P. ADRIANCE Manufacturer and Proprietor,

Po'keepsie, N. Y.

Sole Warehouse in New-York, 165 Greenwich-st., near Courtlandt-st.
April 11—w8tm2t.

CHOICE VEGETABLE SEEDS BY MAIL.

The following varieties will be mailed to any address in the Union on receipt of the price affixed, which may be remitted in postage stamps or current bills:

50 Seeds Hubbard Squash.....	15 cents.
20 do. Honolulu do.	15 do.
50 do. Boston Marrow, pure.....	15 do.
50 do. Japan Apple Pie Melon.....	15 do.
100 do. Perfection Tomato (Pomo d'oro Lesteriano.).....	15 do.
1 Packet Early Paris Cauliflowers (the best in cultivation.).....	25 do.
1 do. Marblehead Mammoth Cabbage (Gregory's.).....	25 do.
1/2 ounce Stone Mason Cabbage (Gregory's).....	15 do.
1/2 do. Premium Flat Dutch Cabbage.....	15 do.
1 Packet Lee's New Sprouting Broccoli, (a new English variety.).....	50 do.
1 ounce Yellow Danvers Onion, (the best variety.).....	25 do.

The entire collection will be sent by mail, prepaid, for \$2. Cash must always accompany the order.

The above may be relied upon as the very best of their kind in cultivation. Address B. K. BLISS, Springfield, Mass. March 14—w4tm2t.

STEEL PLOWS.

We are now manufacturing a superior **Steel Plow**, intended for general use. Some of the advantages it possesses over the cast iron plow, are lightness of draught, durability, and freedom from clogging or sticking in heavy, clayey sticky or tenacious soils. The parts most exposed to wear are so constructed that they may be readily repaired by any blacksmith.

We would refer to the following persons who have them in use: John Johnston, Geneva, N. Y.; Wm. Summer, Pomaria, S. C.; R. C. Ellis, Lyons, N. Y.; Col. A. J. Summer, Long Swamp, Florida; A. J. Bowman, Utica, N. Y.; A. Bradley, Mankato, Minnesota; A. L. Fish, Litchfield, N. Y.; Volney Owen, Union, Ill.; John Slichter, French Creek, N. Y.

"Mohawk Valley Clipper," No. 1, full trimmed, all steel, ..	\$15.00
do. do. with cast point.....	14.00
"Empire," No. 1, with cast point, full trimmed.....	15.00
For Three-Horse Plows,	\$1.50 extra.
For Adjustable Beams,	1.00 do.

We also manufacture Sayre & Klink's Patent Tubular Shank

STEEL CULTIVATOR TEETH.

These Teeth are intended to supersede the old style of wedge teeth and teeth with cast iron heads. They are not liable to become loose in the frame, like the former, nor to break, like the latter. They are as readily attached to the frame as any form of tooth.

SAYRES' PATENT HORSE HOE.

This implement is considered to be superior to any other for cultivating Corn, Cotton, Tobacco, Potatoes, Hops, Broom Corn, Nurseries, and all crops planted in rows or drills.

Steel Shovel Blades and Cultivator Points made, and all kinds of Swaging and Plow work done to order.

SEND FOR A CIRCULAR.

REMINGTONS, MARKHAM & CO.,
Ilion, Herkimer Co., N. Y.
E. REMINGTON & SONS,
BENJAMIN P. MARKHAM,
GEO. TUCKERMAN.

March 21—w&mtf.

SHORT-HORNS.

I offer for sale two Duke of Oxford BULL CALVES, one of them got by the "Duke of Gloster," (11332,) the other by imported "Grand Duke of Oxford," (16184.)

Also several well bred Bull and Heifer Calves by the same sire. I have also a few

JERSEY OR ALDERNEY

Cows and Heifers for sale. JAMES O. SHELDON,
Jan. 24—w&mtf. White Spring Farm, Geneva, N. Y.

OSIER WILLOW CUTTINGS.

The best variety for market and for live fence (*Salix purpurea*)—price \$3 per 1000. By mail, postpaid, for experiment, \$1 per 100. Jan. 17—w16tm4t. D. L. HALSEY, Victory, Cayuga Co., N. Y.

PERUVIAN GUANO—Government brand and weight.

ICHABOE GUANO. AMERICAN GUANO. FISH GUANO.
IMPROVED SUPERPHOSPHATE OF LIME.
BONE DUST, FINE AND COARSE.
LAND PLASTER.

For sale in quantities to suit purchasers. A. LONGETT,
March 1—m3t. No. 34 Cliff-st., New-York.

NO. 1 PERUVIAN GUANO.—Warranted Pure.

Superphosphate of Lime,
Pure Ground Bone, Land Plaster,
Lodi Manufact'g Company's Poudrette, &c.

Sold at the North River Agricultural Warehouse,
GRIFFING BROTHER & CO., Proprietors,
Jan. 1—m4t. 60 Courtlandt Street, New-York City.

AGRICULTURAL IMPLEMENTS.—

A large assortment for sale low, to close up consignments.
March 1—m3t. A. LONGETT, 34 Cliff St., New-York.

**BEARDSLEY'S****HAY ELEVATOR**

OR
Horse Power Fork,

Can be used by one or two horses.

Price, including three pulleys and 60 feet of rope, \$12.

Liberal discount to dealers.

Rights for sale.

Send for a Circular.

LEVI A. BEARDSLEY,

South Edmeston,
April 1—m3t. Otsego Co., N. Y.

**EXCELSIOR AGRICULTURAL WORKS,
ALBANY, N. Y.,**

CHARLES E. PEASE, Proprietor.

Endless Chain Horse Powers, Threshers and Cleaners, Threshers and Separators, Saw Mills and Saws
Dog Powers and Clover Hullers, Shares' Patent Coulter Harrows and Hilling, Hoeing &
Potato Covering Machines, &c.

Having been engaged in the manufacture of the above machines for several years and by personal superintendence to their getting up, I am enabled to guarantee each to be perfect of its kind, and will WARRANT them to give satisfaction.

Letters of inquiry will be promptly replied to, and liberal inducements will be offered to the trade.
April 21—w&ow2tm2t.

CHAS. E. PEASE,
84 State-st., Albany, N. Y.

HOMES FOR THE INDUSTRIOUS

IN THE GARDEN STATE OF THE WEST.



THE ILLINOIS CENTRAL RAILROAD CO., HAVE FOR SALE
1,200,000 ACRES OF RICH FARMING LANDS,
 In Tracts of Forty Acres and upward on Long Credit and at Low Prices.

THE attention of the enterprising and industrious portion of the community is directed to the following statements and liberal inducements offered them by the

ILLINOIS CENTRAL RAILROAD COMPANY.

which, as they will perceive, will enable them, by proper energy, perseverance and industry, to provide comfortable homes for themselves and families, with, comparatively speaking, very little capital.

LANDS OF ILLINOIS.

No State in the Valley of the Mississippi offers so great an inducement to the settler as the State of Illinois. There is no portion of the world where all the conditions of climate and soil so admirably combine to produce those two great staples, CORN and WHEAT, as the Prairies of Illinois.

EASTERN AND SOUTHERN MARKETS.

These lands are contiguous to a railroad 700 miles in length, which connects with other roads and navigable lakes and rivers, thus affording an unbroken communication with the Eastern and Southern markets.

RAILROAD SYSTEM OF ILLINOIS.

Over \$100,000,000 of private capital have been expended on the railroad system of Illinois. Inasmuch as part of the income from several of these works, with a valuable public fund in lands, go to diminish the State expenses; the TAXES ARE LIGHT, and must consequently every day decrease.

THE STATE DEBT.

The State debt is only \$10,106,398 14, and within the last three years has been reduced \$2,959,746 80, and we may reasonably expect that in ten years it will become extinct.

PRESENT POPULATION.

The State is rapidly filling up with population; 868,025 persons having been added since 1850, making the present population 1,723,663, a ratio of 102 per cent. in ten years.

AGRICULTURAL PRODUCTS.

The Agricultural Products of Illinois are greater than those of any other State. The products sent out during the past year exceeded 1,500,000 tons. The wheat crop of 1860 approaches

35,000,000 bushels, while the corn crop yields not less than 140,000,000 bushels.

FERTILITY OF THE SOIL.

Nowhere can the industrious farmer secure such immediate results for his labor as upon these prairie soils, they being composed of a deep rich loam, the fertility of which is unsurpassed by any on the globe.

TO ACTUAL CULTIVATORS.

Since 1854 the Company have sold 1,300,000 acres. They sell only to actual cultivators, and every contract contains an agreement to cultivate. The road has been constructed through these lands at an expense of \$30,000,000. In 1850 the population of forty-nine counties, through which it passes, was only 335,598 since which 479,293 have been added; making the whole population 814,891, a gain of 143 per cent.

EVIDENCES OF PROSPERITY.

As an evidence of the thrift of the people, it may be stated that 600,000 tons of freight, including 8,600,000 bushels of grain, and 250,000 barrels of flour were forwarded over the line last year.

PRICES AND TERMS OF PAYMENT.

The prices of these lands vary from \$6 to \$25 per acre, according to location, quality, &c. First class farming lands sell for about \$10 to \$12 per acre; and the relative expense of subduing prairie land as compared with wood land is in the ratio of 1 to 10 in favor of the former. The terms of sale for the bulk of these lands will be

ONE YEAR'S INTEREST IN ADVANCE,

at six per cent per annum, and six interest notes at six per cent., payable respectively in one, two, three, four, five and six years from date of sale; and four notes for principal, payable in four, five, six and seven years from date of sale; the contract stipulating that one-tenth of the tract purchased shall be fenced and cultivated, each and every year, for five years from date of sale, so that at the end of five years one-half shall be fenced and under cultivation.

TWENTY PER CENT. WILL BE DEDUCTED

from the valuation for cash, except the same should be at six dollars per acre, when the cash price will be five dollars.

Pamphlets descriptive of the lands, soil, climate, productions, prices, and terms of payment, can be had on application to

J. W. FOSTER, Land Commissioner,
CHICAGO, ILLINOIS.

For the name of the Towns, Villages and Cities situated upon the Illinois Central Railroad, see pages 188, 189 and 190 Appleton's Railway Guide.